ORDER NO. AD8904083C8

Service Manual

Digital Power Amplifier

Amplifier

SE-M100

Color

(K) .... Black Type

Area

Country Code	Area	Color
(E), (E5)	Continental Europe	(K)
(EB)	Great Britain	(K)
(G)	Third Region	(K)
(GL)	Australia	(K)

SPECIFICATIONS

(DIN 45 500)

■ MAIN AMP. SECTION

20 Hz~20 kHz continuous power output	
both channels driven	2 × 115 W (8 Ω)
	2 × 160 W (4 Ω)
1 kHz continuous power output (DIN)	
both channels driven	2 × 125 W (8 Ω)
	2 × 180 W (4 Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.005 % (8 Ω)
	0.007 % (4 Ω)
rated power at 1 kHz	0.0007 % (8 Ω)
half power at 20 Hz~20 kHz	0.003 % (8 Ω)
half power at 1 kHz	0.0007 % (8 Ω)
−26 dB power at 1 kHz	0.001 % (4 Ω)
50 mW power at 1 kHz	0.003 % (4 Ω)
Intermodulation distortion	
rated power at 50 Hz: 7 kHz = 4:1, SMPTE, 8 Ω	0.005 %
Residual hum and noise	0.3 mV
Damping factor	110 (8 Ω), 55 (4 Ω)
Headphones output level and impedance	720 mV/330 Ω
Load impedance	
A or B, Bi-wiring	4 Ω~16 Ω
A and B	8 Ω~16 Ω
Input sensitivity and impedance	
Fixed	1 V/18 kΩ
Variable	1 V/18 kΩ
S/N	
rated power (4 Ω)	
Fixed	105 dB (IHF' 66: 120 dB)
Variable	105 dB (IHF' 66: 120 dB)
Frequency response	
Fixed, Variable	0.8 Hz~120 kHz (−3 dB)
	+0 dB, −0.2 dB (20 Hz~20 kHz)
Channel balance, 250 Hz~6,300 Hz	±1 dB
Channel separation, 1 kHz	70 dB

■ DIGITAL SECTION

Total harmonic distortion (1 kHz)	0.005 % (EIAJ)
S/N	112 dB (EIAJ)
Dynamic range	100 dB (EIAJ)
Frequency response	2 Hz~20 kHz
	+0.3 dB, −0.3 dB

■ GENERAL

Power consumption	920 W
Power supply	
For Great Britain and Australia	AC 50 Hz/60 Hz, 240 V
For Continental Europe	AC 50 Hz/60 Hz, 220 V
For others	AC 50 Hz/60 Hz, 110 V/127 V/220 V/240 V
Dimensions (W × H × D)	430 × 161 × 403 mm
	(16-15/16" × 6-11/32" × 15-7/8")
Weight	16.5 kg (36.3 lb.)

Notes:

1. Specifications are subject to change without notice.
   Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Technics

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■ CONTENTS

Page
BEFORE REPAIR 2
PROTECTION CIRCUITRY 2
ACCESSORIES 2
LOCATION OF CONTROLS 3
DISASSEMBLY INSTRUCTIONS .... 4~7
MEASUREMENTS AND ADJUSTMENTS .... 8~10
BLOCK DIAGRAM .... 11~13
WIRING CONNECTION DIAGRAM 14
PRINTED CIRCUIT BOARDS .... 15~18
SCHEMATIC DIAGRAM .... 19~30
TERMINAL GUIDE OF IC'S TRANSISTORS AND DIODES 23
DIGITAL DIRECT-DRIVE CIRCUITRY 31
FUNCTIONS OF IC TERMINALS .... 32~34
RESISTORS AND CAPACITORS .... 34~39
REPLACEMENT PARTS LIST .... 40~44
EXPLODED VIEW 45

■ BEFORE REPAIR

(1)Turn off the power supply. Using a 10Ω, 5W resistor connect both ends of power supply capacitors (C501~C504 10000 μF, C505, C506 4700 μF) in order to discharge the voltage.

(2)Before turning the power supply on , after completion of repair , slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

Power supply voltage	AC 110 V	AC 127 V	AC 220 V	AC 240 V
Consumed current 50 Hz	600~1000 mA	500~950 mA	250~550 mA	250~550 mA
Consumed current 60 Hz	500~950 mA	400~800 mA	200~500 mA	200~500 mA

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

∗ No sound is heard when the power is switched ON.

∗ Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted" , or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.
If this occurs, follow the procedure outlined below:

1.Switch OFF the power.

2.Determine the cause of the problem and correct it.

3.Switch ON the power once again.

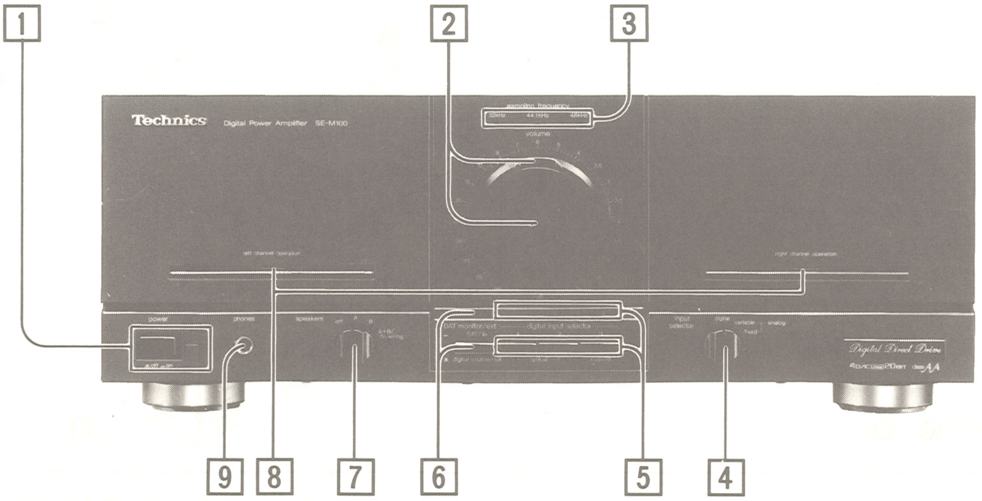
Note:
When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ ACCESSORIES

●Stereo pin cord (SJPD18)	1	
●AC plug adaptor (SJP9215)	1	for <G> area only.
●AC power cord (SFDAC05E03)	1	for <E/E5> area only.

LOCATION OF CONTROLS

•Front panel


1
2
3
Technics
Digital Power Amplifier SE-M100
9
8
7
6
5
4

1 Power switch/indicator

2 Volume control/indicator

3 Sampling frequency indicators

32 kHz: For digital signals with the 32-kHz mode sampling frequency
44.1 kHz: CD and others
48 kHz: For digital signals with the 48-kHz mode sampling frequency

4 Input selector

digital: Set to this position to select a digital component connected to one of the "DIGITAL INPUT" terminals (and then select which component by pressing one of the digital input selectors).
variable: Set to this position to select the compact disc player connected to the "VARIABLE" terminals.
fixed: Set to this position to select the analog component connected to a control amplifier, etc.

5 Digital input selectors/indicators

6 DAT monitor switch/indicator

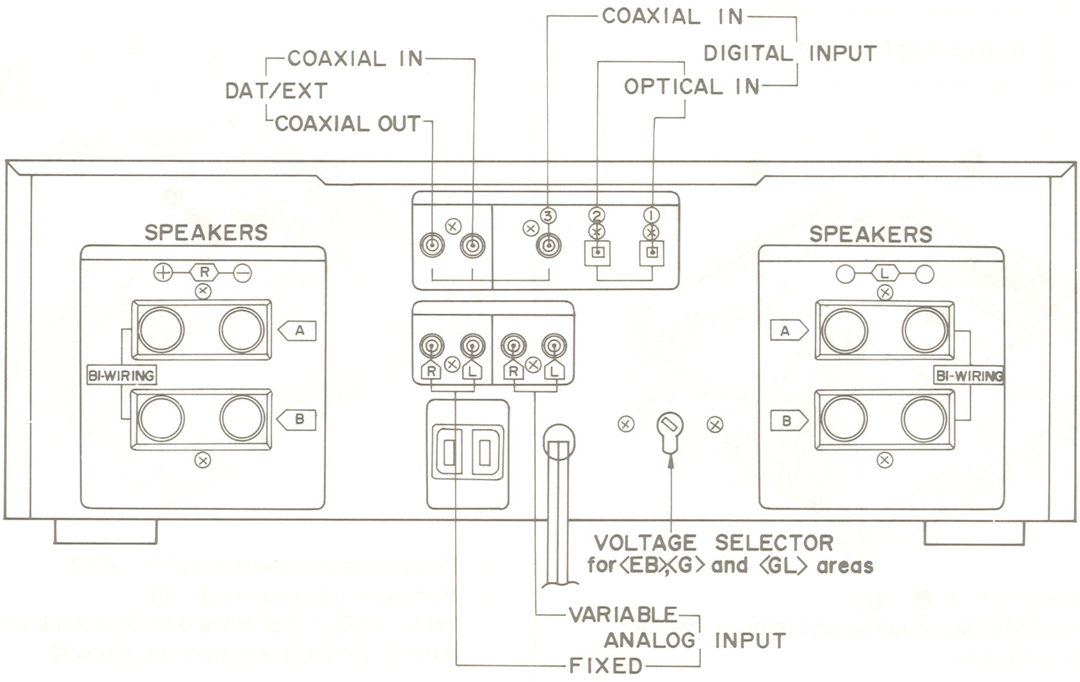
7 Speaker selector (speakers)

off: No sound will be heard from the speaker systems.
A: Sound can be heard from the speaker systems connected to the "A" terminals.
B: Sound can be heard from the speaker systems connected to the "B" terminals.
A + B/bi-wiring: Sound can be heard simultaneously from the speaker systems connected to the "A" terminals and the "B" terminals.
Or, if bi-wired speaker systems are connected, sound can be heard from them.

8 Operation indicators

9 Headphones jack

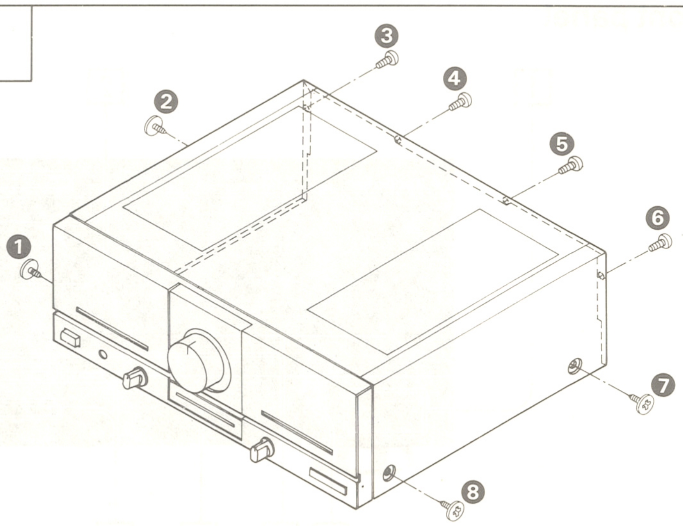
•Rear panel


COAXIAL IN
DAT/EXT
COAXIAL OUT
COAXIAL IN
DIGITAL INPUT
OPTICAL IN
3
2
1
SPEAKERS
R
A
BI-WIRING
B
R
L
R
L
SPEAKERS
L
A
BI-WIRING
B
VOLTAGE SELECTOR
for <EB><G> and <GL> areas
VARIABLE
ANALOG INPUT
FIXED

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1 | **Removal of the cabinet**

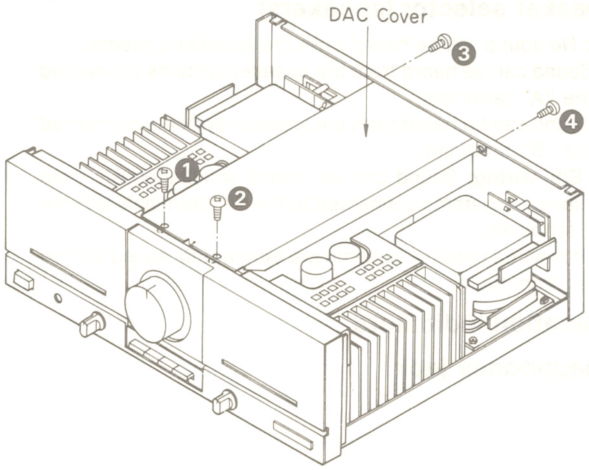
Procedure
1



●Remove the 8 screws (❶~❽).

Ref. No. 2 | **Removal of the DAC cover**

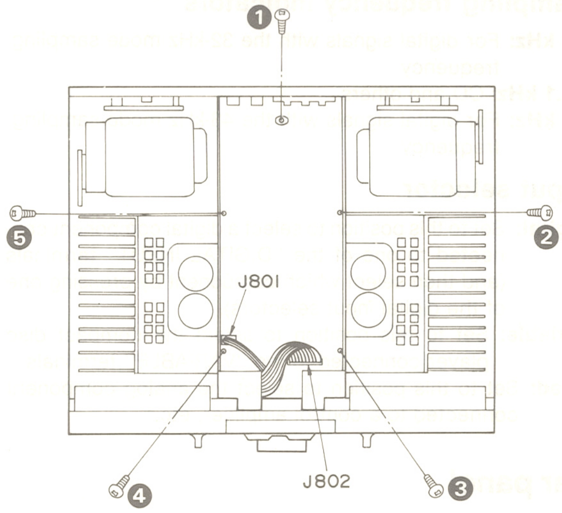
Procedure
1→2

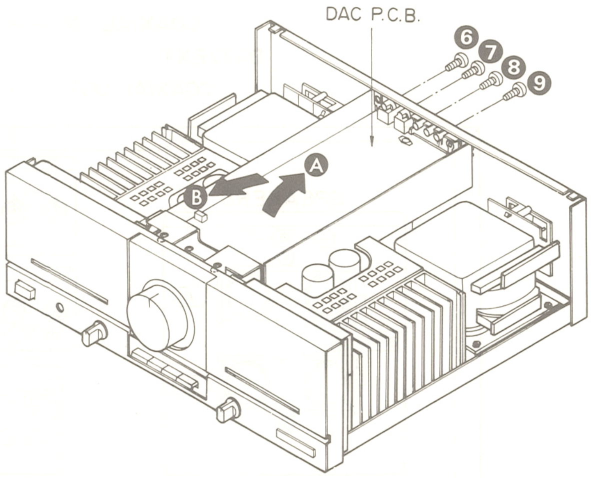

DAC Cover
❶
❷
❸
❹

●Remove the 4 screws (❶~❹).

Ref. No. 3 | **Removal of the DAC P.C.B.**

Procedure
1→2→3

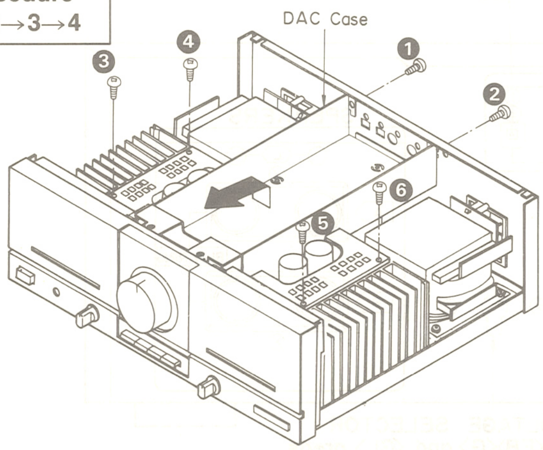

❶
❷
❸
❹
❺
J801
J802


DAC P.C.B.
❻
❼
❽
❾
Ⓐ
Ⓑ

1. Pull out the 2 connectors (J801, J802).
2. Remove the 9 screws (❶~❾).
3. Lift the DAC P.C.B. in the direction of the arrow Ⓐ, and remove it in the direction of the arrow Ⓑ.

Ref. No. 4 | **Removal of the DAC case**

Procedure
1→2→3→4

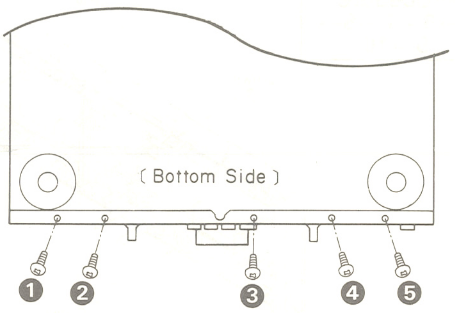

DAC Case
❶
❷
❸
❹
❺
❻

1. Remove the 4 screws (❶~❹).
2. Lift the lower DAC case slightly, and remove it in the direction of the arrow.

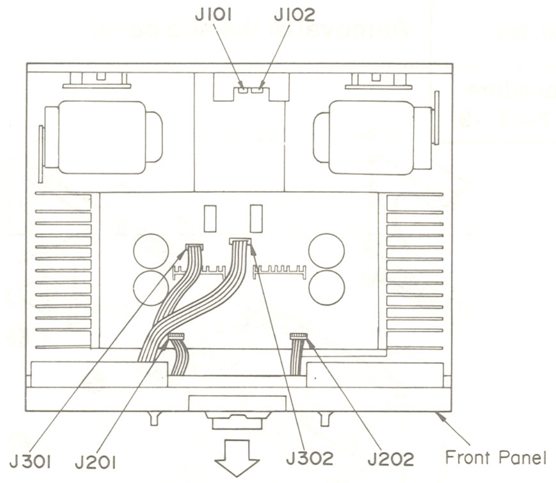
Ref. No. 5

Removal of the front panel

Procedure
1→2→3→ 4→5

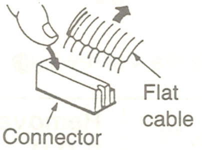

〔Bottom Side〕
❶
❷
❸
❹
❺

1. Remove the 5 screws (❶~❺).
2. Pull out the 2 connectors (J101, J102).
3. Pull out the 4 flat cables (J201, J202, J301, J302).
4. Remove the front panel in the direction of the arrow.


J101
J102
J301
J201
J302
J202
Front Panel

Removal of the flat cable

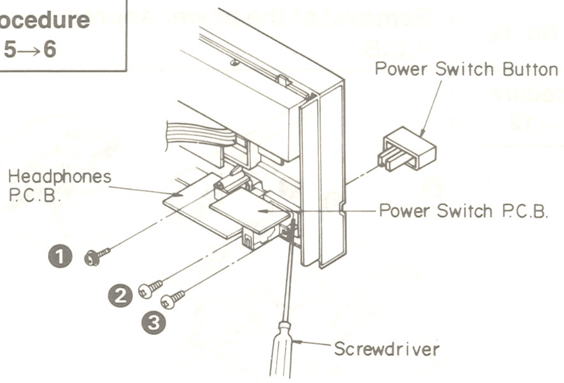
Pull out the flat cable while pressing the connector.


Flat cable
Connector

Ref. No. 6

Removal of the headphones P.C.B. and power switch P.C.B.

Procedure
5→6


Power Switch Button
Headphones P.C.B.
Power Switch P.C.B.
❶
❷
❸
Screwdriver

●Headphones P.C.B.

1. Remove the screw (❶).

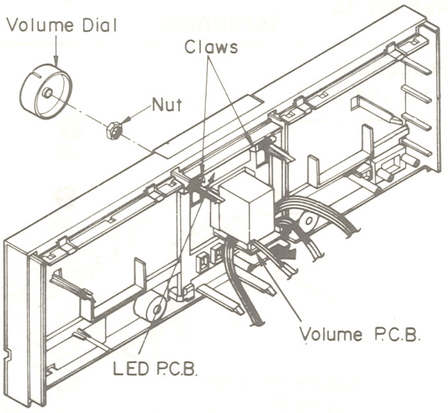
●Power switch P.C.B.

2. Push the power switch button from the back of the front cover by using a screwdriver and remove it.
3. Remove the 2 screws (❷, ❸).

Ref. No. 8

Removal of the volume P.C.B. and LED P.C.B.

Procedure
5→7→8


Volume Dial
Claws
Nut
Volume P.C.B.
LED P.C.B.

●Volume P.C.B.

1. Remove the volume dial and nut.

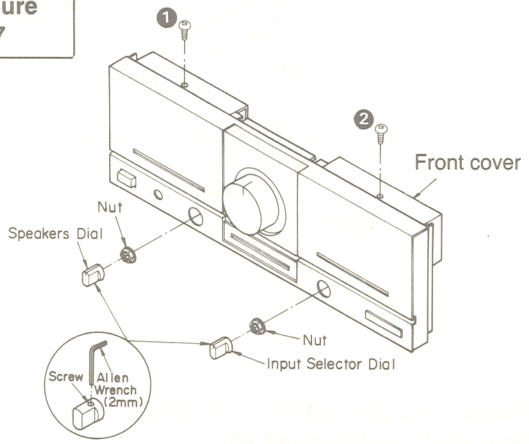
●LED P.C.B.

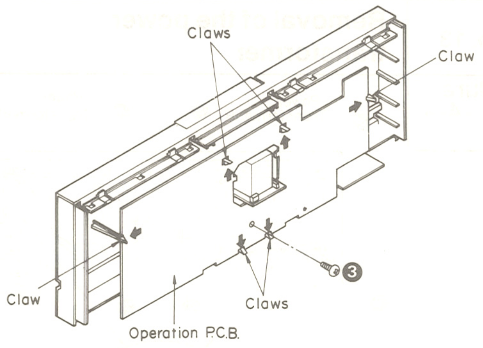
2. Remove the LED P.C.B. by releasing the 2 claws in the direction of the arrows.

Ref. No. 7

Removal of the operation P.C.B.

Procedure
5→7


❶
❷
Front cover
Nut
Speakers Dial
Nut
Input Selector Dial
Screw
Allen Wrench (2mm)

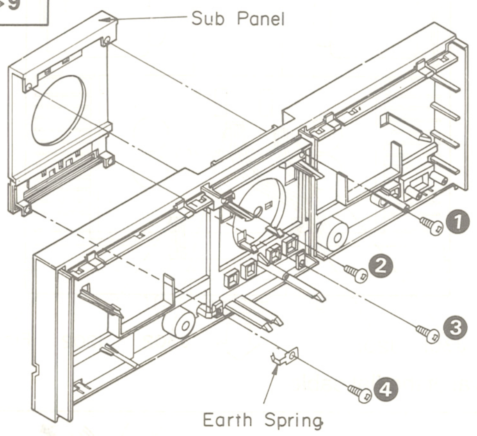

Claws
Claw
Claw
Claws
❸
Operation P.C.B.

1. Remove the screws of the speaker selector knob and the input selector knob, using the 2 mm allen wrench.
2. Remove the 2 nuts.
3. Remove the 2 screws (❶, ❷) and remove the front cover.
4. Remove the screw (❸).
5. Remove the operation P.C.B. by releasing the 6 claws in the direction of the arrows.

Ref. No. 9

Removal of the sub panel

Procedure
5→7→8→9

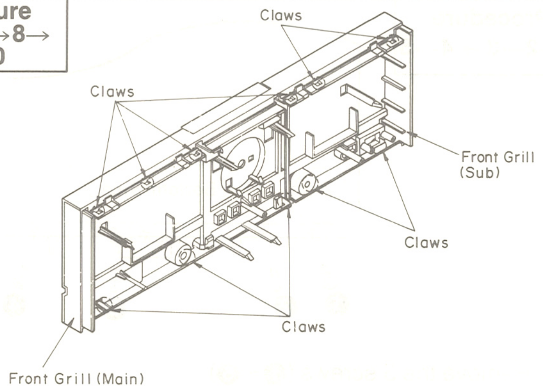

Sub Panel
❶
❷
❸
❹
Earth Spring

- Remove the 4 screws (❶~❹).

Ref. No. 10

Removal of the front grill

Procedure
5→6→7→8→9→10


Claws
Claws
Front Grill (Sub)
Claws
Claws
Front Grill (Main)

• Front grill (Main)

1. Remove the front grill (Main) by releasing the 7 claws.

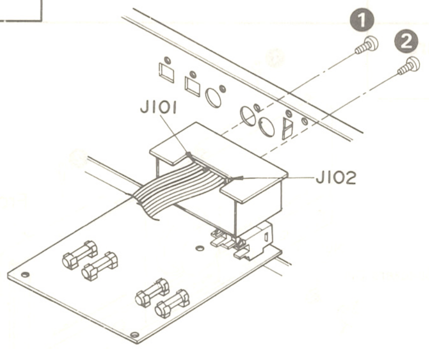
• Front grill (Sub)

2. Remove the front grill (Sub) by releasing the 4 claws.

Ref. No. 11

Removal of the input terminal P.C.B.

Procedure
1→2→3→4→11

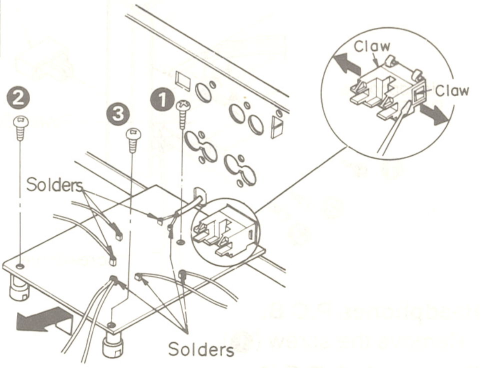

❶
❷
J101
J102

1. Pull out the 2 connectors (J101, J102).
2. Remove the 2 screws (❶, ❷).

Ref. No. 12

Removal of the power source P.C.B.

Procedure
11→12

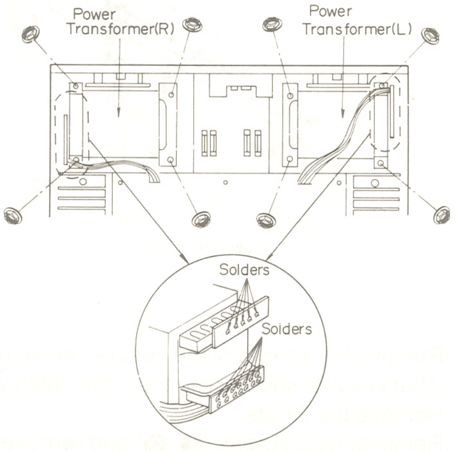

Claw
Claw
❷
❸
❶
Solders
Solders

1. Remove the 3 screws (❶~❸).
2. Unsolder each lead wire.
3. Remove the power source P.C.B. by releasing the 2 claws of AC outlet.

Ref. No. 13

Removal of the power transformer

Procedure
1→2→3→4→13

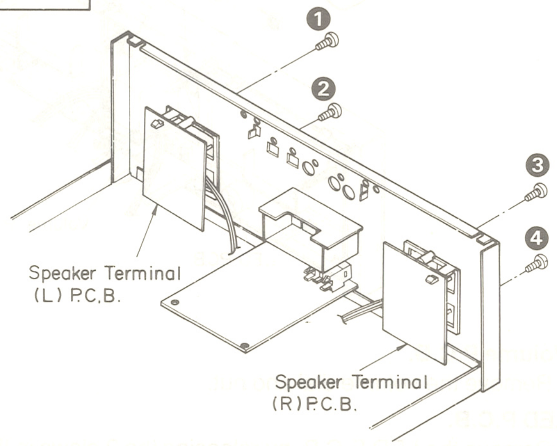

Power Transformer(R)
Power Transformer(L)
Solders
Solders

1. Unsolder each lead wire.
2. Remove the 8 nuts.
   (Do not remove the screws on the chassis.)

Ref. No. 14

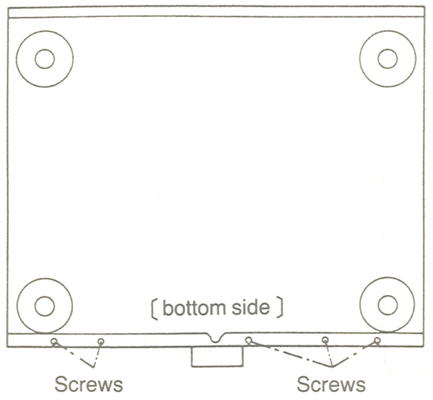
Removal of the speaker terminals

Procedure
13→14

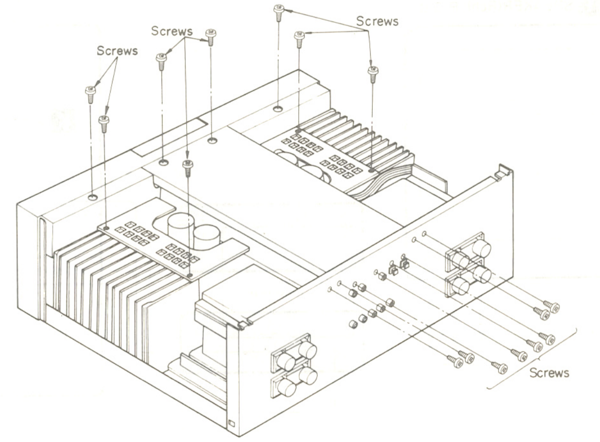

❶
❷
❸
❹
Speaker Terminal (L) P.C.B.
Speaker Terminal (R) P.C.B.

- Remove the 4 screws (❶~❹).

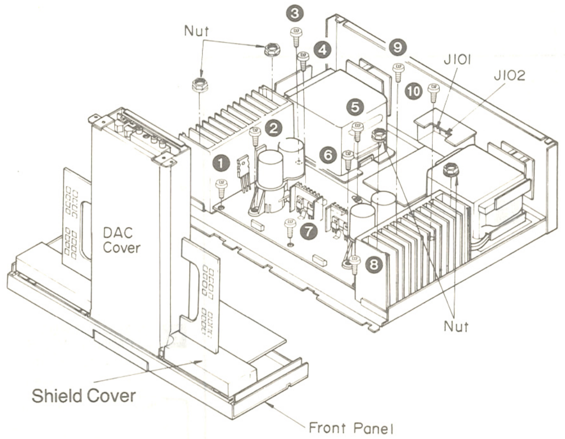
Ref. No. 15	Checking of the main P.C.B.
Procedure 1→15	


[bottom side]
Screws
Screws

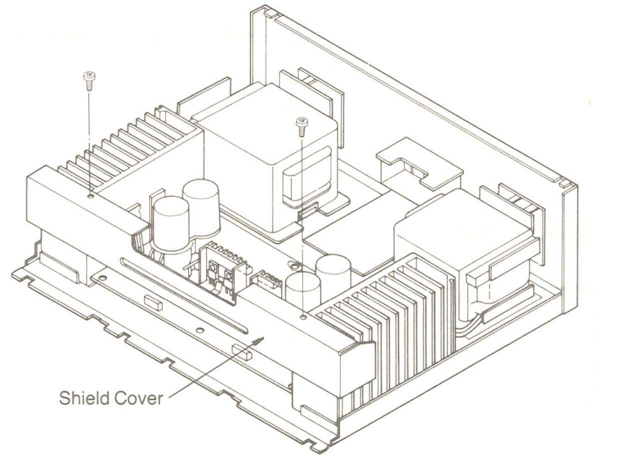
1. Remove the 5 screws on the bottom of the front panel.


Screws
Screws
Screws
Screws

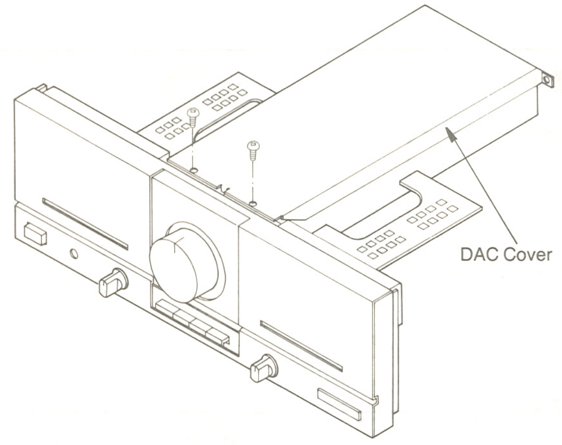
2. Remove the 12 screws on the rear panel and the 4 screws on the heat sink.


Nut
❶
❷
❸
❹
❺
❻
❼
❽
❾
❿
J101
J102
DAC Cover
Nut
Shield Cover
Front Panel

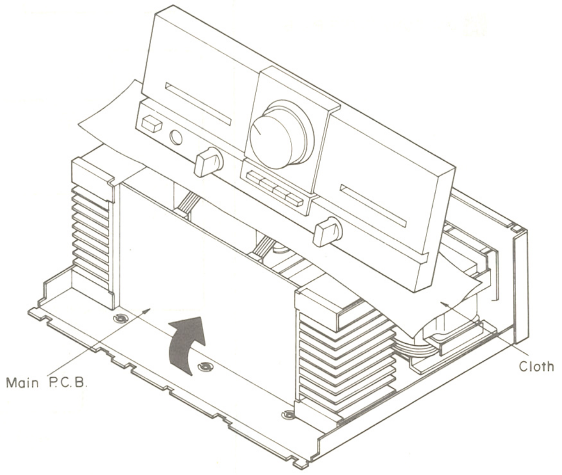
3. Remove the 10 screws (❶~❿) on the main P.C.B.
4. Remove the 4 nuts (8 mm) on the heat sink. (Do not remove the screws on the chassis.)
5. Disconnect the 2 connectors (J101, J102).
6. Remove the front panel with the DAC cover toward you.


Shield Cover

7. Remove the front cover, and attach it to the heat sink by using two screws in order to prevent main P.C.B. from crack.

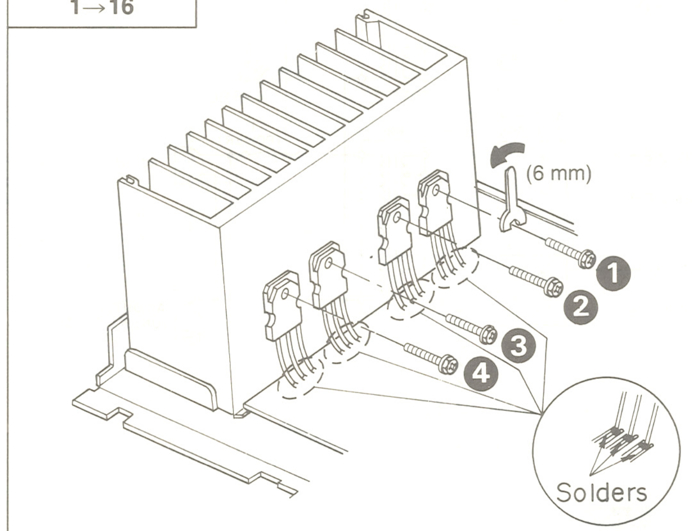


8. Attach the DAC cover to the front panel using two screws.
9. Connect J101 and J102.


Main P.C.B.
Cloth

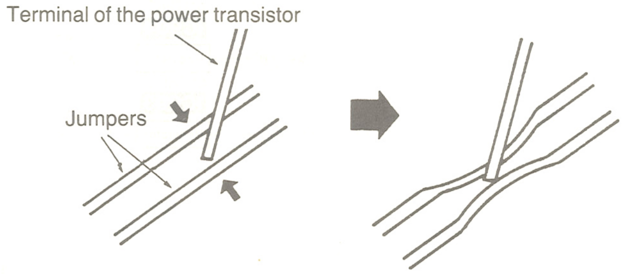
10. Lift the main P.C.B. with the heat sink in the direction of the arrow together with the front panel.
11. Place cloth under the front panel to protect P.C.B.s from short-circuit.

Ref. No. 16	Removal of the power transistors
Procedure 1→16	


(6 mm)
❶
❷
❸
❹
Solders

1. Unsolder the terminals of the power transistors.
2. Remove the 4 screws (❶~❹).

Caution:
When reinstalling the power transistors, be sure to apply silicone compond (SZZ0L15) to the back of the power transistors.
Bring the jumpers to be soldered toward the terminal of the power transistor.


Terminal of the power transistor
Jumpers

MEASUREMENTS AND ADJUSTMENTS

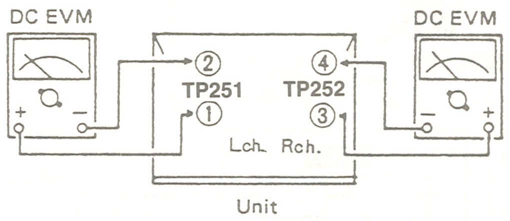
Control positions and equipment used.

- Volume knob .... ∞ (Minimum)
- Input selector knob .... digital
- Speaker selector knob .... A

- AC electronic voltmeter (EVM)
- DC electronic voltmeter (EVM)
- Distortion analyser
- Digital checker (SZZP1095C)

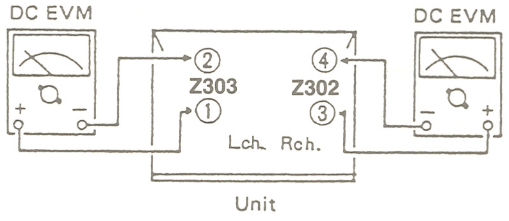
VOLTAGE CONTROL(V)AMP.IDLING(ICQ) ADJUSTMENT

1. Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
2. Completely turn the (V) amp. adjusting volumes **(VR251, VR252)** counter-clockwise.
3. Turn ON the set when it is cold, and immediately adjust **VR251** and **VR252** so that the voltage is **25 mV**.
   Also, check that the voltage is **25~30 mV** (standard: **27 mV**) after lapse of **10~15 minutes**. (Below **30 mV** after lapse of **20 min.**)


DC EVM
DC EVM
②
④
TP251
TP252
①
③
Lch.
Rch.
Unit

CURRENT DRIVE(C)AMP.IDLING(ICQ)ADJUSTMENT

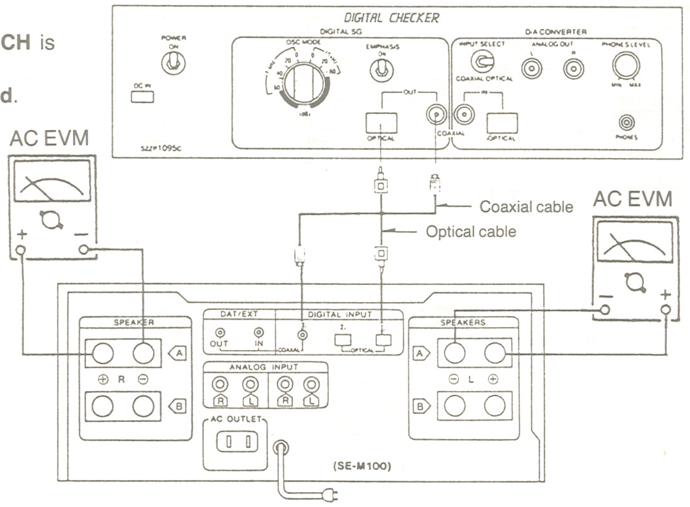
1. Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
2. Completely turn the (C) amp. adjusting volumes **(VR301, VR302)** counter-clockwise.
3. Turn ON the set when it is cold, and after the adjustment of the (V) amp. ICQ, adjust **VR301** and **VR302** so that the voltage is **3 mV**. Also, check that the voltage is **4~7 mV** (standard: **5 mV**) after lapse of **10~15 minutes**. (Below **10 mV** after lapse of **20 min.**)


DC EVM
DC EVM
②
④
Z303
Z302
①
③
Lch.
Rch.
Unit

DA CONVERTER GAIN ADJUSTMENT

1. Test equipment connection is shown in figure (Connect the AC EVM on both channels.)
2. Set the input selector knob to the **digital** position.
3. Press the **"3 (COAXIAL)"** button of the digital input selectors.
4. Feed a digital signal **(1kHz, 0 dB)** into the DIGITAL INPUT **3 (COAXIAL)** terminal.
5. Set the volume knob to the **−20 dB** position.
6. Short **TP801** and adjust **VR803** so that the voltage of **L-CH** is **minimized**.
7. Adjust **VR804** so that the voltage of **R-CH** is **minimized**.

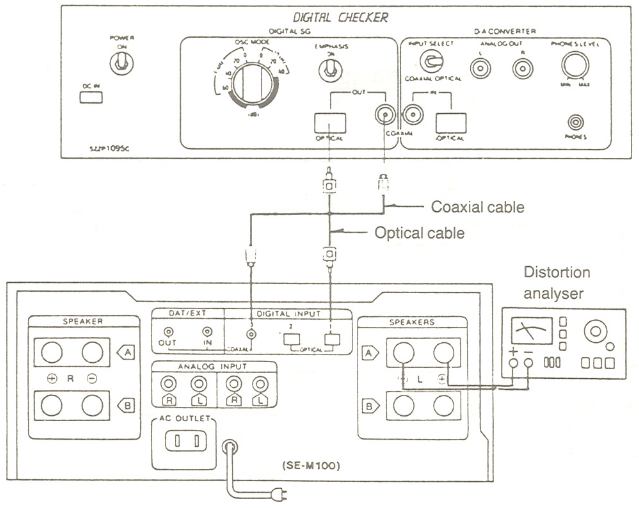
Digital Checker (SZZP1095C)


DIGITAL CHECKER
AC EVM
AC EVM
Coaxial cable
Optical cable
SPEAKER
DAT/EXT
DIGITAL INPUT
SPEAKERS
ANALOG INPUT
AC OUTLET
(SE-M100)

DA CONVERTER MOST SIGNIFICANT BIT ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the input selector knob to the **digital** position.
3. Press the **"3 (COAXIAL)"** button of the digital input selectors.
4. Feed a digital signal **(1 kHz, 0 dB)** into the DIGITAL INPUT **3 (COAXIAL)** terminal.
5. Set the volume knob to the **−20 dB** position.
6. Adjust **VR801** so that the distortion factor of **L-CH** is **minimized**.
7. Adjust **VR802** so that the distortion factor of **R-CH** is **minimized**.

Digital Checker (SZZP1095C)


DIGITAL CHECKER
Coaxial cable
Optical cable
Distortion analyser
SPEAKER
DAT/EXT
DIGITAL INPUT
SPEAKERS
ANALOG INPUT
AC OUTLET
(SE-M100)

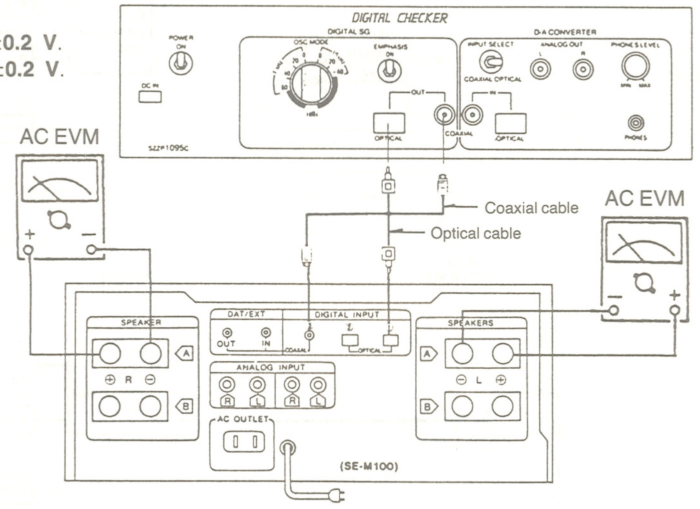
DA CONVERTER DISTORTIONS ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the input selector knob to the **digital** position.
3. Press the **"3 (COAXIAL)"** button of the digital input selectors.
4. Feed a digital signal **(1 kHz, −24 dB)** into the DIGITAL INPUT **3 (COAXIAL)** terminal.
5. Set the volume knob to the **maximum** position.
6. Short **TP701** and adjust **VR701** so that the distortion factor of **L-CH** is **minimized**.
7. Adjust **VR702** so that the distortion factor of **R-CH** is **minimized**.

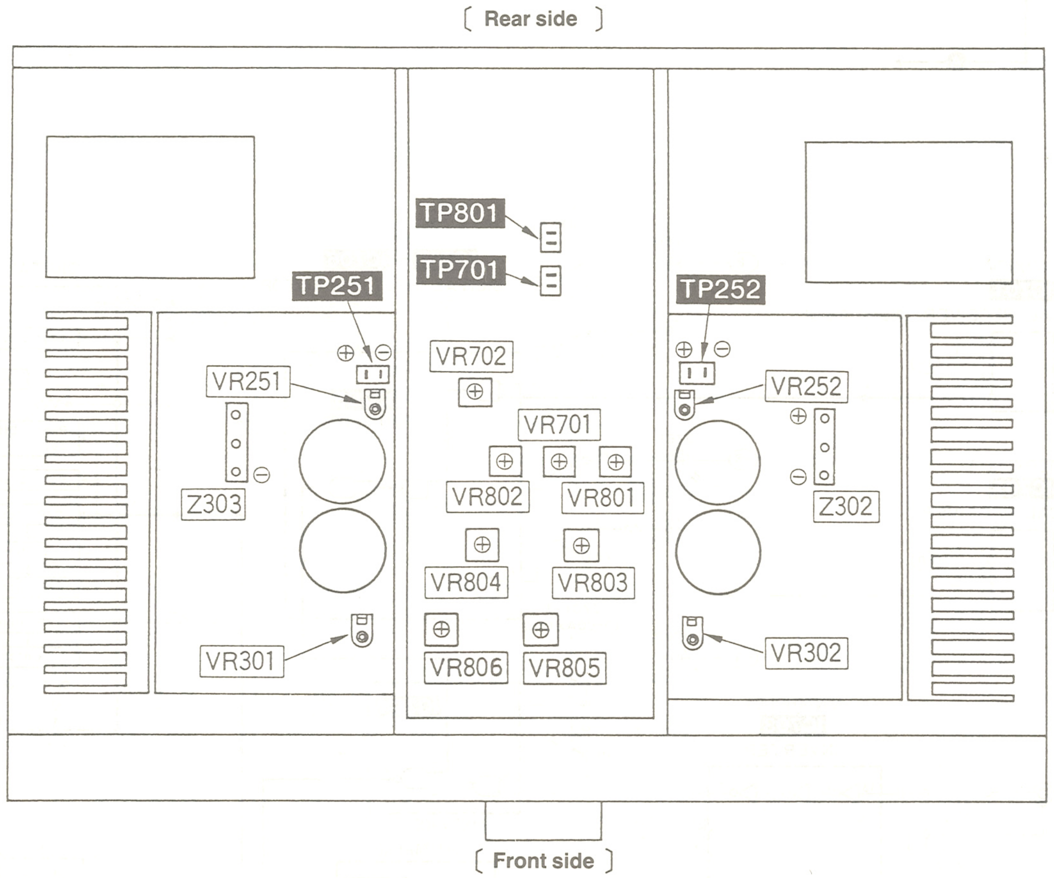
DA CONVERTER GAIN ADJUSTMENT

1. Test equipment connection is shown in figure (Connect the AC EVM on both channels.)
2. Set the input selector knob to the **digital** position.
3. Press the **"3 (COAXIAL)"** button of the digital input selectors.
4. Feed a digital signal **(1 kHz, −20 dB)** into the DIGITAL INPUT **3 (COAXIAL)** terminal.
5. Set the volume knob to the **maximum** position.
6. Adjust **VR805** so that the voltage of **L-CH** is **10.0 V±0.2 V**.
7. Adjust **VR806** so that the voltage of **R-CH** is **10.0 V±0.2 V**.

Digital Checker (SZZP1095C)


DIGITAL CHECKER
AC EVM
AC EVM
Coaxial cable
Optical cable
SPEAKER
DAT/EXT
DIGITAL INPUT
SPEAKERS
ANALOG INPUT
AC OUTLET
(SE-M100)

●Adjustment points


〔 Rear side 〕
TP801
TP701
TP251
TP252
VR251
VR252
VR702
VR701
VR802
VR801
VR804
VR803
VR806
VR805
Z303
Z302
VR301
VR302
〔 Front side 〕

Test point

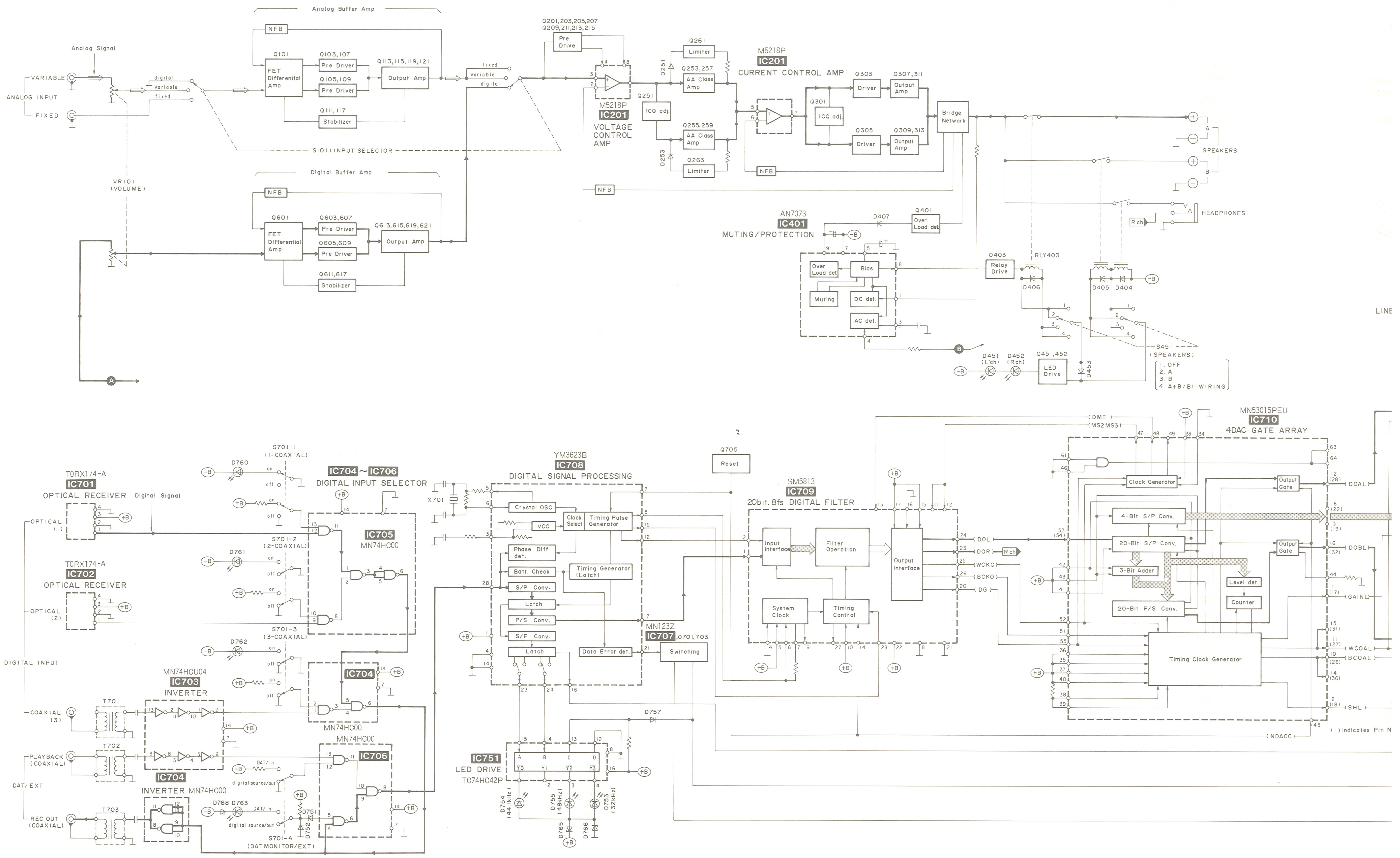
TP251 ...Lch Voltage control amp I_{CQ} adj.
TP252 ...Rch Voltage control amp I_{CQ} adj.
TP701 ...DA Converter distortion adj.
TP801 ...DA Converter MSB adj.
Z302...... Rch Current drive amp I_{CQ} adj.
Z303...... Lch Current drive amp I_{CQ} adj.

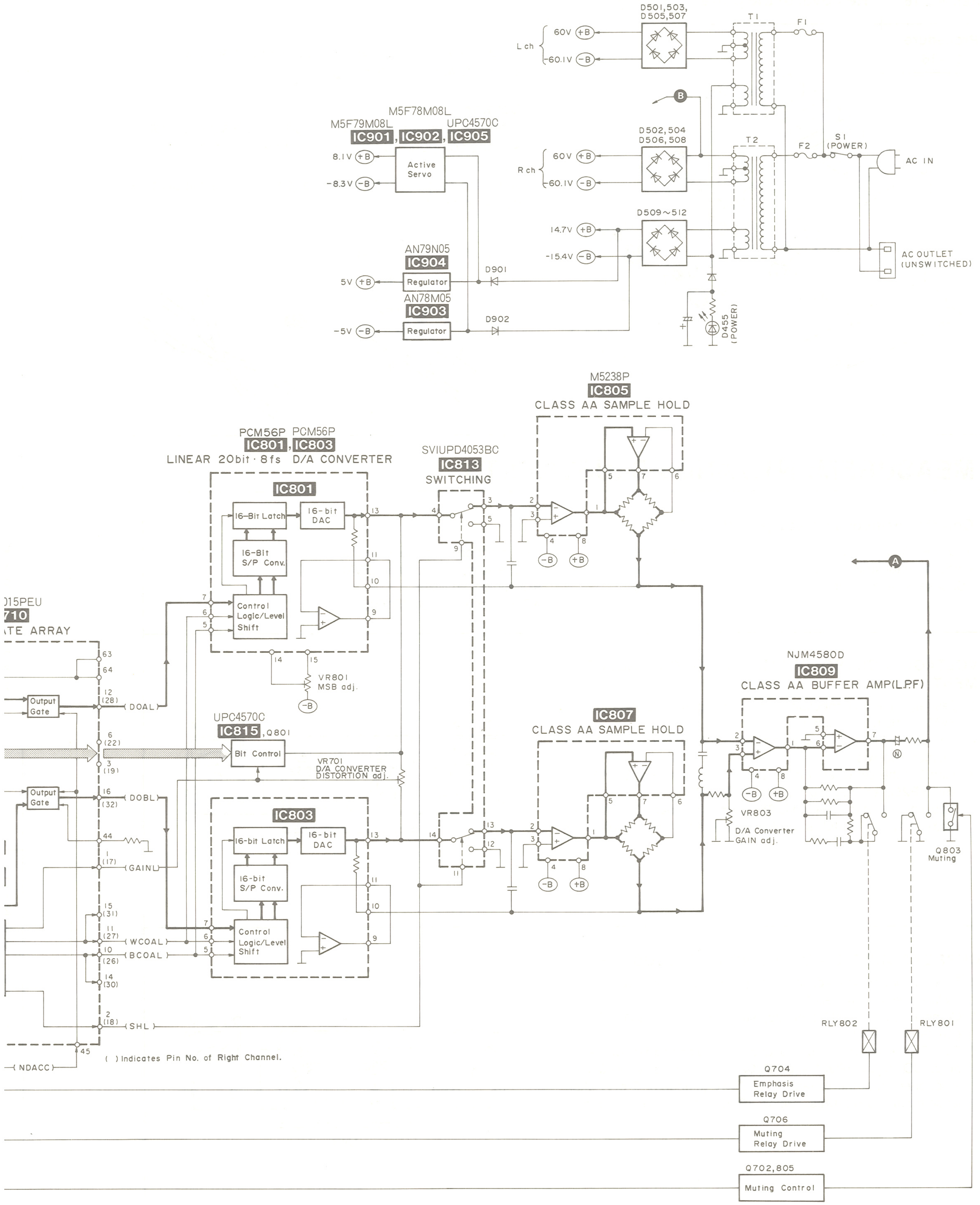
Adjustment VR

VR251...Lch Voltage control amp I_{CQ} adj.
VR301...Lch Current drive amp I_{CQ} adj.
VR701...Lch DA Converter distortion adj.
VR801...Lch DA Converter MSB adj.
VR803...Lch DA Converter gain adj.
VR805...Lch DA Converter gain adj.

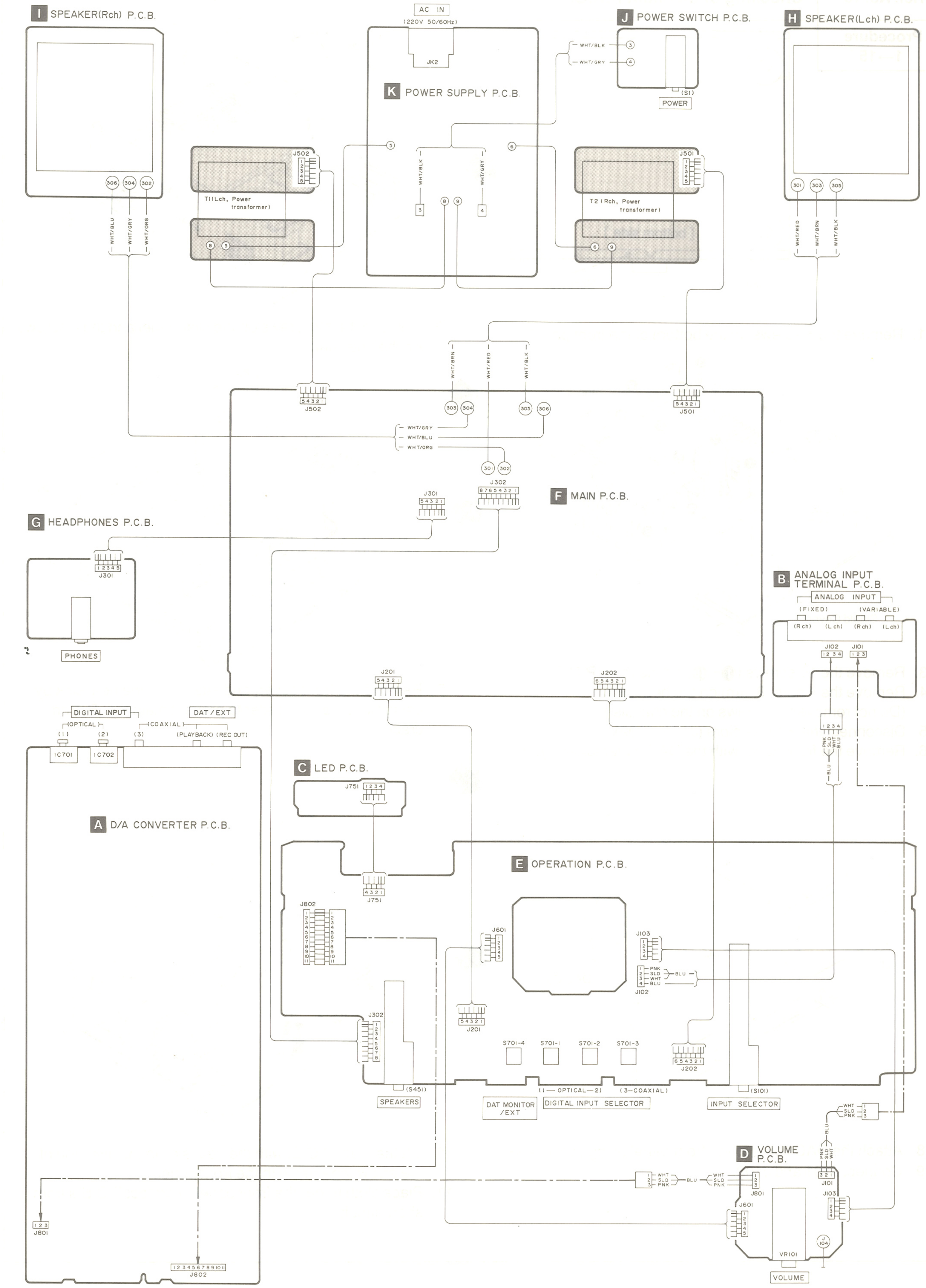
VR252...Rch Voltage control amp I_{CQ} adj.
VR302...Rch Current drive amp I_{CQ} adj.
VR702...Rch DA Converter distortion adj.
VR802...Rch DA Converter MSB adj.
VR804...Rch DA Converter gain adj.
VR806...Rch DA Converter gain adj.

■ BLOCK DIAGRAM


Analog Buffer Amp
NFB
Q101
FET Differential Amp
Q103,107
Pre Driver
Q105,109
Pre Driver
Q113,115,119,121
Output Amp
Q111,117
Stabilizer
Analog Signal
VARIABLE
ANALOG INPUT
FIXED
digital
Variable
fixed
fixed
Variable
digital
S101 (INPUT SELECTOR
VR101 (VOLUME)
Digital Buffer Amp
NFB
Q601
FET Differential Amp
Q603,607
Pre Driver
Q605,609
Pre Driver
Q613,615,619,621
Output Amp
Q611,617
Stabilizer
A
Q201,203,205,207
Q209,211,213,215
Pre Drive
M5218P
IC201
VOLTAGE CONTROL AMP
NFB
Q251
ICQ adj.
Q261
Limiter
Q253,257
AA Class Amp
Q255,259
AA Class Amp
Q263
Limiter
D251
D253
M5218P
IC201
CURRENT CONTROL AMP
Q301
ICQ adj.
Q303
Driver
Q305
Driver
Q307,311
Output Amp
Q309,313
Output Amp
NFB
Bridge Network
SPEAKERS
A
B
HEADPHONES
R ch
AN7073
IC401
MUTING/PROTECTION
D407
Q401
Over Load det.
Over Load det
Bias
Muting
DC det.
AC det.
Q403
Relay Drive
RLY403
D406
D405
D404
S451
(SPEAKERS)
1. OFF
2. A
3. B
4. A+B/BI-WIRING
D451 (L'ch)
D452 (R ch)
Q451,452
LED Drive
D453
B
LINE
TORX174-A
IC701
OPTICAL RECEIVER
Digital Signal
OPTICAL (1)
TORX174-A
IC702
OPTICAL RECEIVER
OPTICAL (2)
DIGITAL INPUT
COAXIAL (3)
PLAYBACK (COAXIAL)
DAT/EXT
REC OUT (COAXIAL)
T701
T702
T703
MN74HCU04
IC703
INVERTER
IC704
INVERTER MN74HC00
D760
D761
D762
D768 D763
S701-1 (1-COAXIAL)
S701-2 (2-COAXIAL)
S701-3 (3-COAXIAL)
S701-4 (DAT MONITOR/EXT)
on
off
DAT/in
digital source/out
D751
D752
IC704~IC706
DIGITAL INPUT SELECTOR
IC705
MN74HC00
IC704
MN74HC00
MN74HC00
IC706
X701
YM3623B
IC708
DIGITAL SIGNAL PROCESSING
Crystal OSC
VCO
Clock Select
Timing Pulse Generator
Phase Diff det.
Batt. Check
Timing Generator (Latch)
S/P Conv.
Latch
P/S Conv.
S/P Conv.
Latch
Data Error det.
MN123Z
IC707,Q701,703
Switching
IC751
LED DRIVE
TC74HC42P
D754 (44.1kHz)
D755 (48kHz)
D753 (32kHz)
D765
D766
D757
Q705
Reset
SM5813
IC709
20bit. 8fs DIGITAL FILTER
Input Interface
Filter Operation
Output Interface
System Clock
Timing Control
DOL
DOR
R ch
WCKO
BCKO
DG
DMT
MS2 MS3
MN53015PEU
IC710
4DAC GATE ARRAY
Clock Generator
4-Bit S/P Conv.
20-Bit S/P Conv.
13-Bit Adder
20-Bit P/S Conv.
Level det.
Counter
Output Gate
Output Gate
Timing Clock Generator
DOAL
DOBL
GAINL
WCOAL
BCOAL
SHL
NDACC
( ) Indicates Pin N
+B
-B

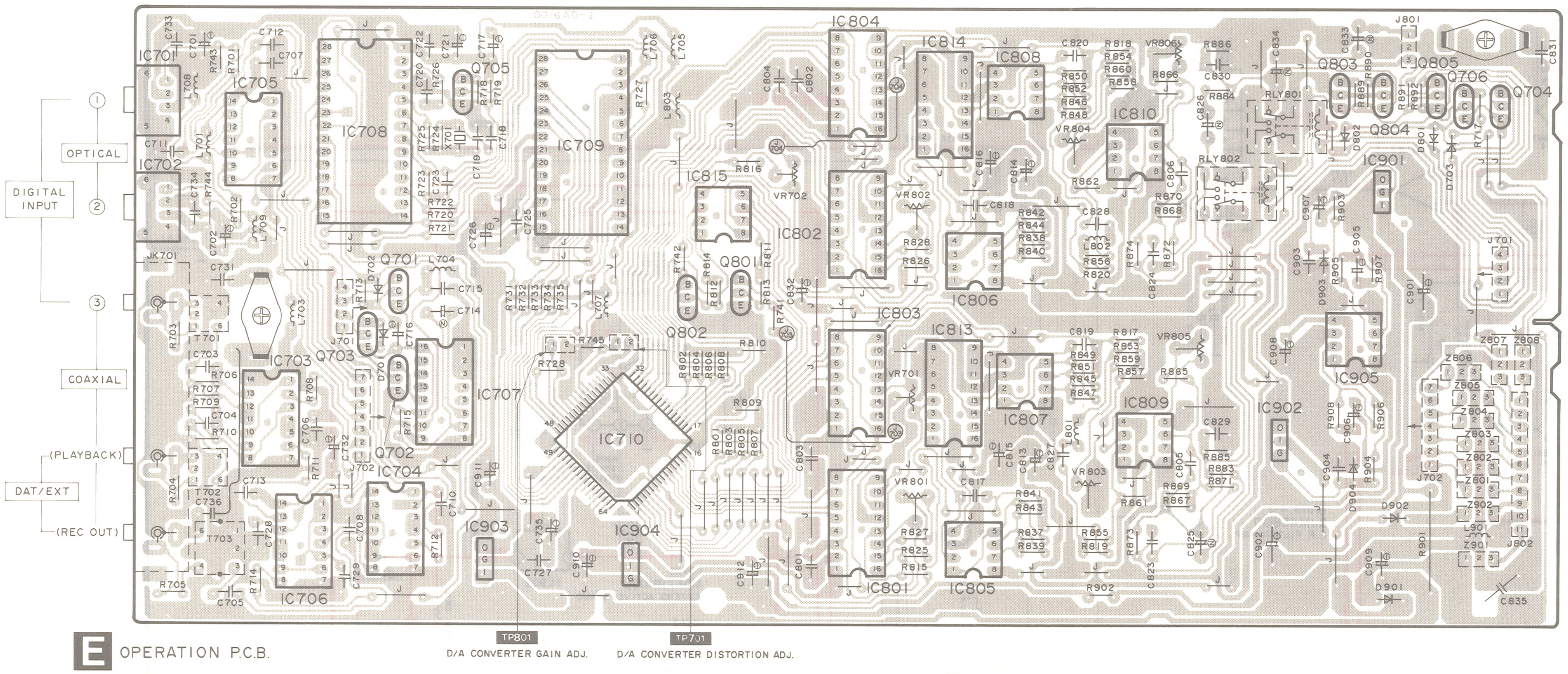

D501,503,
D505,507
T1
F1
L ch
60V
-60.1V
B
D502,504
D506,508
T2
F2
S1
(POWER)
AC IN
R ch
60V
-60.1V
D509~512
14.7V
-15.4V
AC OUTLET
(UNSWITCHED)
M5F78M08L
M5F79M08L
UPC4570C
IC901, IC902, IC905
8.1V
-8.3V
Active
Servo
AN79N05
IC904
5V
Regulator
D901
AN78M05
IC903
-5V
Regulator
D902
D455
(POWER)
M5238P
IC805
CLASS AA SAMPLE HOLD
PCM56P PCM56P
IC801, IC803
LINEAR 20bit · 8fs D/A CONVERTER
SVIUPD4053BC
IC813
SWITCHING
IC801
16-Bit Latch
16-bit
DAC
16-Bit
S/P Conv.
Control
Logic/Level
Shift
A
015PEU
710
ATE ARRAY
VR801
MSB adj.
Output
Gate
DOAL
UPC4570C
IC815, Q801
Bit Control
VR701
D/A CONVERTER
DISTORTION adj.
NJM4580D
IC809
CLASS AA BUFFER AMP(LPF)
IC807
CLASS AA SAMPLE HOLD
DOBL
GAINL
IC803
16-bit Latch
16-bit
DAC
16-bit
S/P Conv.
Control
Logic/Level
Shift
VR803
D/A Converter
GAIN adj.
Q803
Muting
WCOAL
BCOAL
SHL
NDACC
( ) Indicates Pin No. of Right Channel.
RLY802
RLY801
Q704
Emphasis
Relay Drive
Q706
Muting
Relay Drive
Q702,805
Muting Control

■ WIRING CONNECTION DIAGRAM

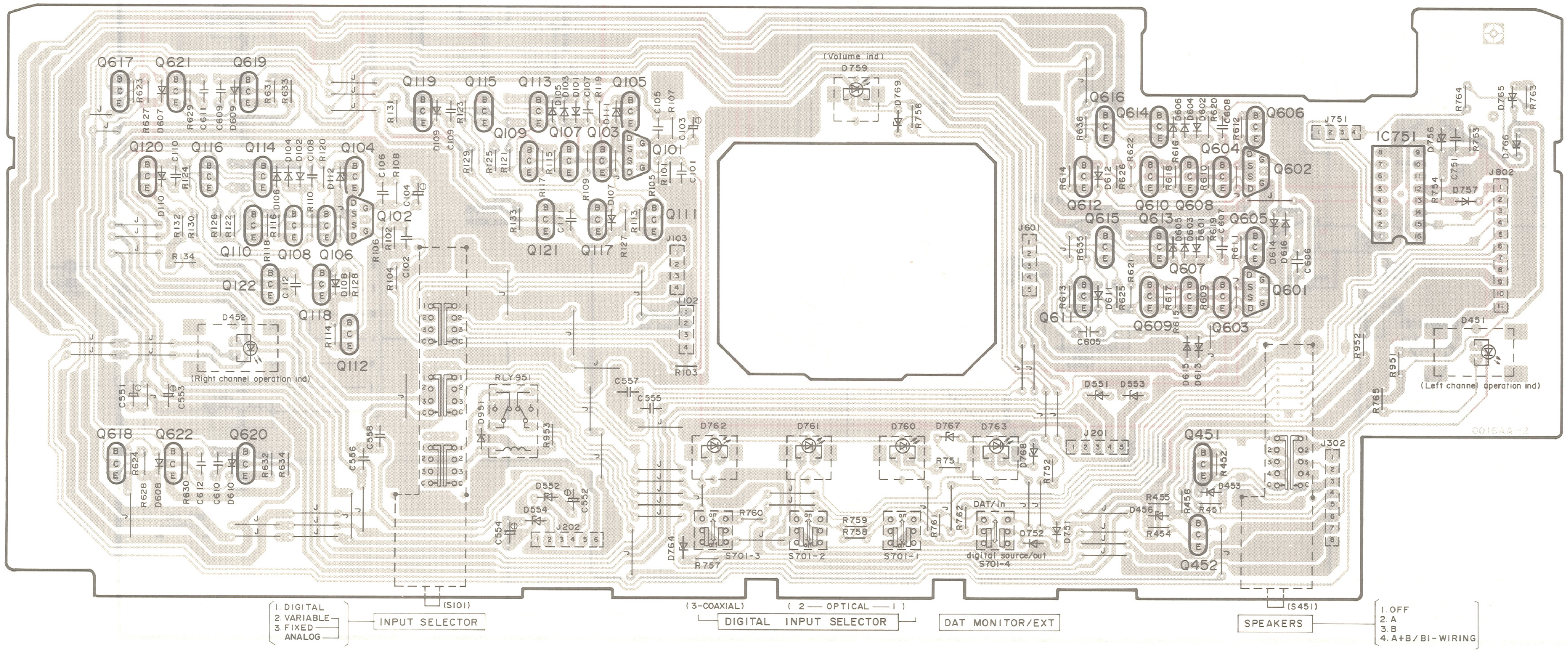

I SPEAKER(Rch) P.C.B.
AC IN
(220V 50/60Hz)
JK2
K POWER SUPPLY P.C.B.
J POWER SWITCH P.C.B.
POWER
H SPEAKER(Lch) P.C.B.
T1(Lch, Power transformer)
T2(Rch, Power transformer)
J502
J501
F MAIN P.C.B.
J301
J302
G HEADPHONES P.C.B.
PHONES
B ANALOG INPUT TERMINAL P.C.B.
ANALOG INPUT
(FIXED)
(VARIABLE)
(Rch)
(Lch)
J102
J101
J201
J202
DIGITAL INPUT
(OPTICAL)
(COAXIAL)
DAT/EXT
(PLAYBACK)
(REC OUT)
IC701
IC702
A D/A CONVERTER P.C.B.
C LED P.C.B.
J751
E OPERATION P.C.B.
J802
J601
J103
S701-4
S701-1
S701-2
S701-3
SPEAKERS
DAT MONITOR /EXT
DIGITAL INPUT SELECTOR
INPUT SELECTOR
D VOLUME P.C.B.
VR101
VOLUME
J801

PRINTED CIRCUIT BOARDS (Parts list on page 34~43)

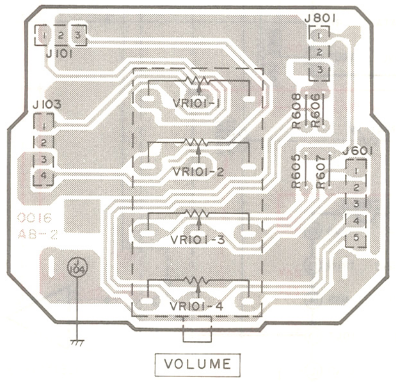
A D/A CONVERTER P.C.B


DIGITAL INPUT
① OPTICAL ②
③ COAXIAL
(PLAYBACK)
DAT/EXT
(REC OUT)
JK701
IC701
IC702
IC703
IC704
IC705
IC706
IC707
IC708
IC709
IC710
IC801
IC802
IC803
IC804
IC805
IC806
IC807
IC808
IC809
IC810
IC813
IC814
IC815
IC901
IC902
IC903
IC904
IC905
Q701
Q702
Q703
Q704
Q705
Q706
Q801
Q802
Q803
Q804
Q805
RLY801
RLY802
VR701
VR702
VR801
VR802
VR803
VR804
VR805
VR806
J801
J701
J702
J802
TP801
D/A CONVERTER GAIN ADJ.
TP701
D/A CONVERTER DISTORTION ADJ.

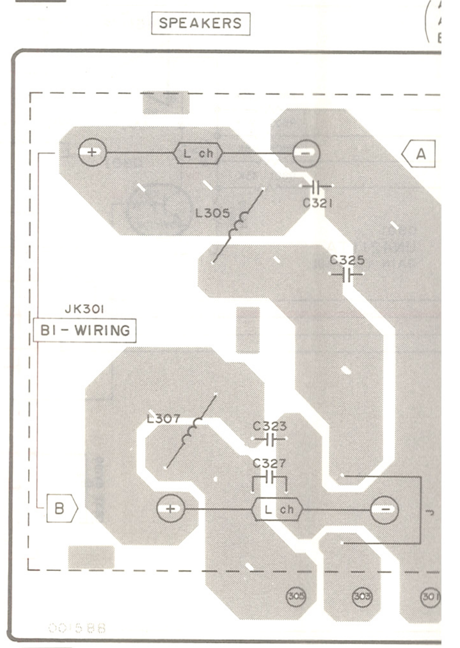
E OPERATION P.C.B.


(Volume ind)
D759
(Right channel operation ind)
D452
(Left channel operation ind)
D451
RLY951
IC751
DAT/in
digital source/out
S701-1
S701-2
S701-3
S701-4
1. DIGITAL
2 VARIABLE
3 FIXED ANALOG
(S101)
INPUT SELECTOR
(3-COAXIAL)
(2 — OPTICAL — 1)
DIGITAL INPUT SELECTOR
DAT MONITOR/EXT
(S451)
SPEAKERS
1. OFF
2. A
3. B
4. A+B/BI-WIRING

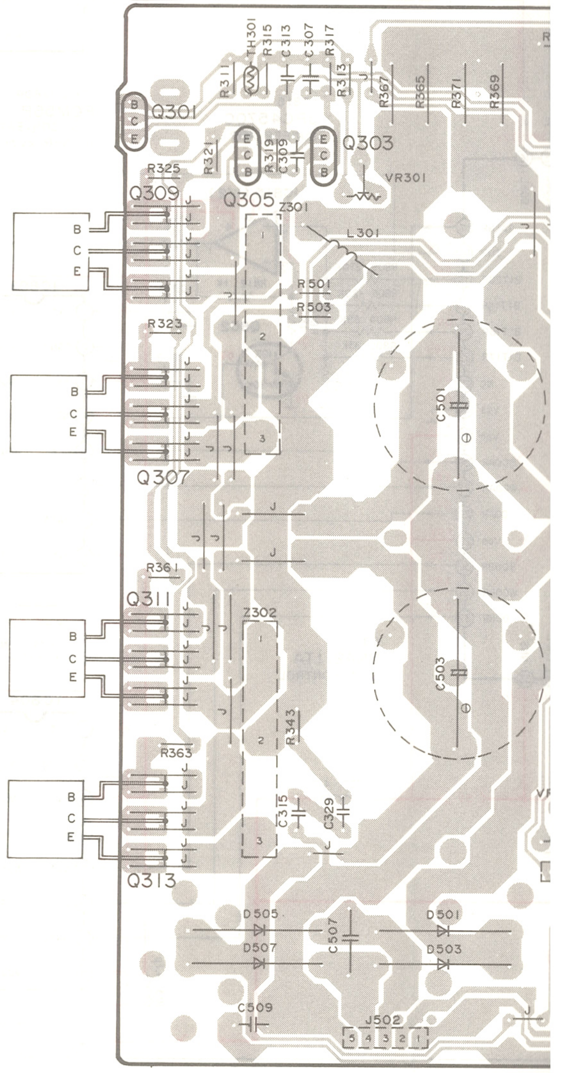
D VOLUME P.C.B.

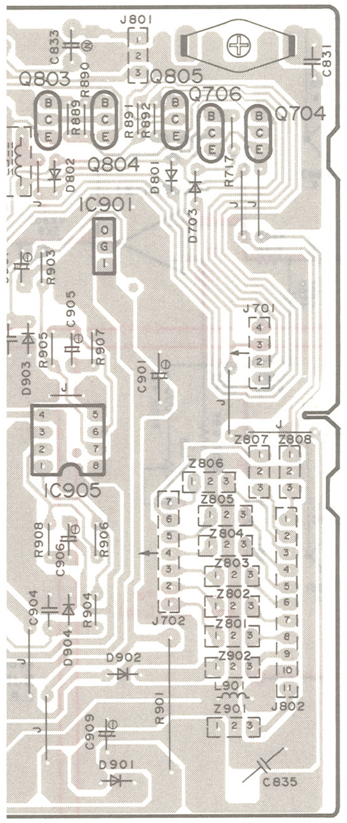

J801
J101
J103
J601
VR101-1
VR101-2
VR101-3
VR101-4
VOLUME

H SPEAKER (Lch) P.C.B.

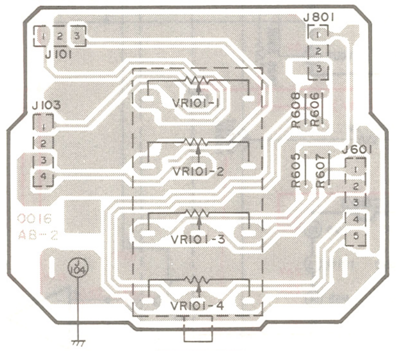

SPEAKERS
A
B
L ch
L305
L307
C321
C323
C325
C327
JK301
BI-WIRING

F MAIN P.C.B.


Q301
Q303
Q305
Q307
Q309
Q311
Q313
VR301
L301
Z301
Z302
B
C
E
C501
C503
C507
D501
D503
D505
D507
J502


J801
Q803
Q805
Q706
Q704
Q804
IC901
J701
IC905
Z806
Z805
Z804
Z803
Z802
Z801
Z807
Z808
J702
Z902
L901
Z901
J802
D902
D901
C835
C831

D VOLUME P.C.B.

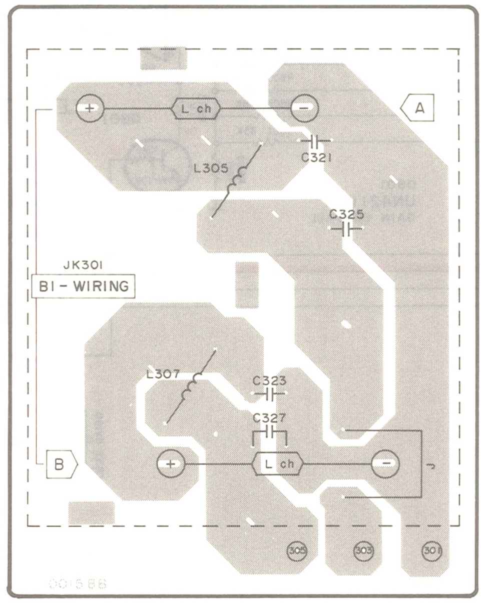

J101
J801
J103
VR101-1
VR101-2
VR101-3
VR101-4
J601
R608
R606
R605
R607

VOLUME

H SPEAKER (Lch) P.C.B.

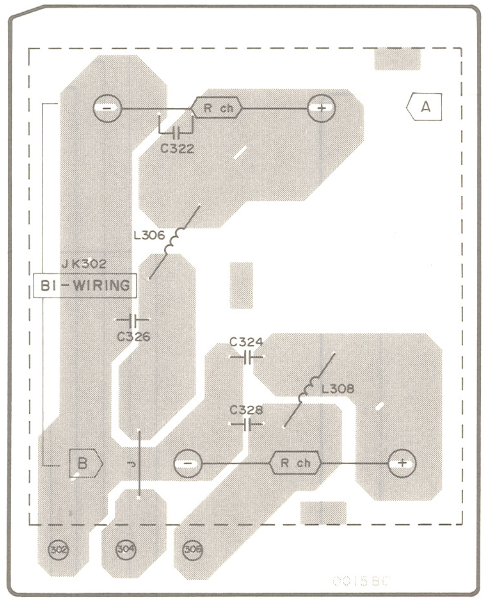
SPEAKERS

A OR B : 4-16Ω/EACH SPEAKER
A AND B : 8-16Ω/EACH SPEAKER
BI-WIRING : 4-16Ω/SPEAKER


L ch
A
L305
C321
C325
JK301
BI-WIRING
L307
C323
C327
B
L ch

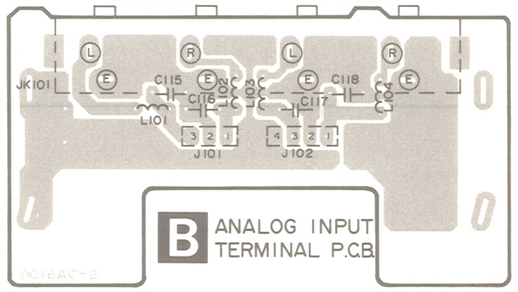
I SPEAKER (Rch) P.C.B.

SPEAKERS


R ch
A
C322
L306
JK302
BI-WIRING
C326
C324
L308
C328
B
R ch

ANALOG INPUT

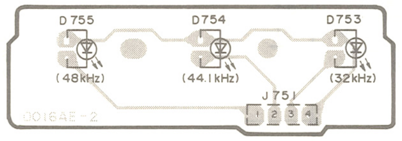
(VARIABLE) (FIXED)


JK101
C115
C116
L101
L102
C117
C118
J101
J102

B ANALOG INPUT TERMINAL P.C.B.

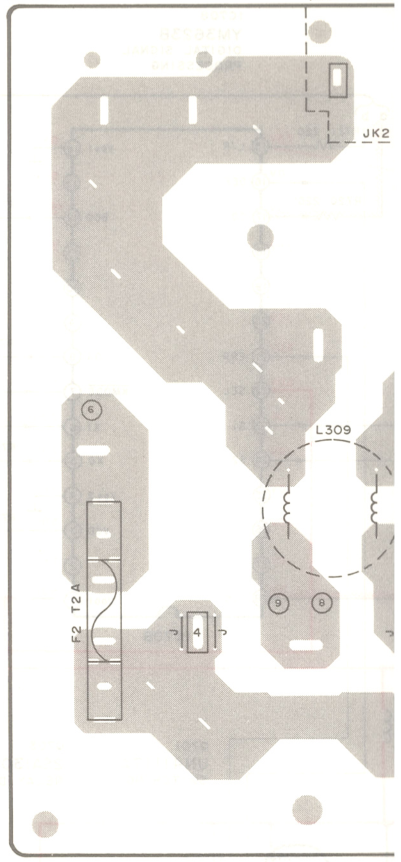
C LED P.C.B.

SAMPLING FREQUENCY IND

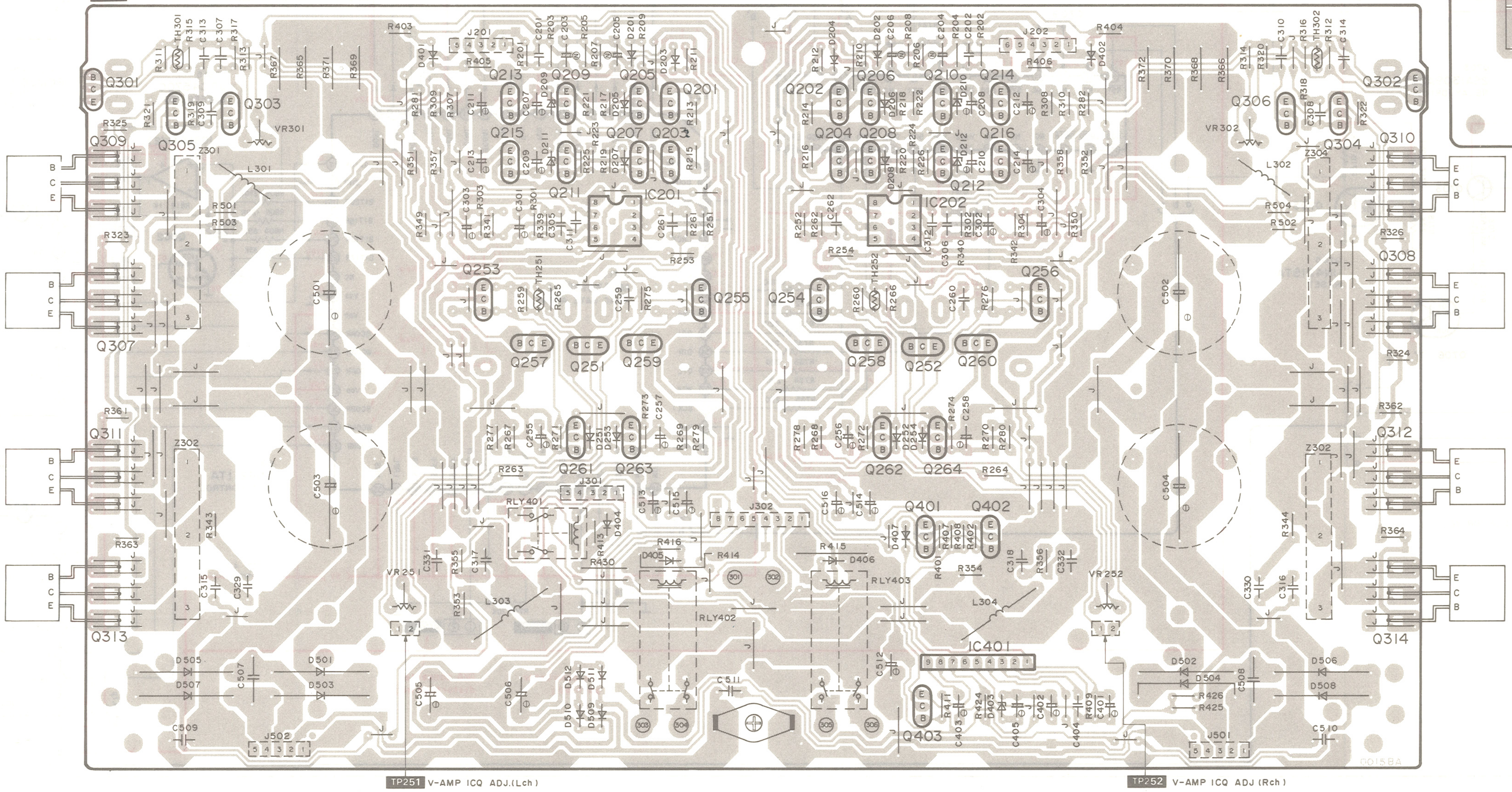

D755
D754
D753
(48kHz)
(44.1kHz)
(32kHz)
J751

K POWER SUPPLY P.C.B.

AC IN (220V 50/


JK2
L309
F2 T2A

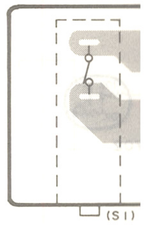
F MAIN P.C.B.


Q301
Q303
Q305
Q309
VR301
L301
Q213
Q209
Q205
Q201
Q215
Q207
Q203
Q211
IC201
Q202
Q206
Q210
Q214
Q204
Q208
Q216
Q212
IC202
Q306
VR302
Q302
Q304
Q310
L302
Q308
Q253
Q255
Q254
Q256
Q257
Q251
Q259
Q258
Q252
Q260
C501
C502
Q307
Q311
Q312
Q261
Q263
Q262
Q264
C503
C504
RLY401
J301
J302
Q401
Q402
R416
R415
D406
RLY403
RLY402
VR251
VR252
L303
L304
IC401
Q313
Q314
D505
D507
D501
D503
D502
D504
D506
D508
C511
Q403
J502
J501
C509
C510
E C B

TP251 V-AMP ICQ ADJ.(Lch)

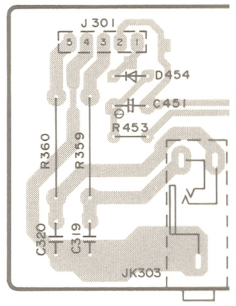
TP252 V-AMP ICQ ADJ (Rch)

J POWER

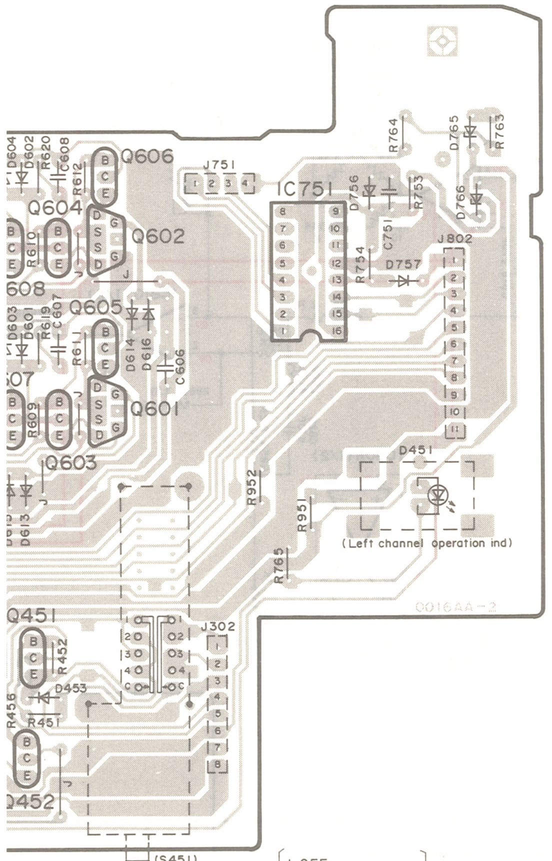


POWER

G HEADPHONES


J301
D454
C451
R453
R360
R359
C320
C319
JK303

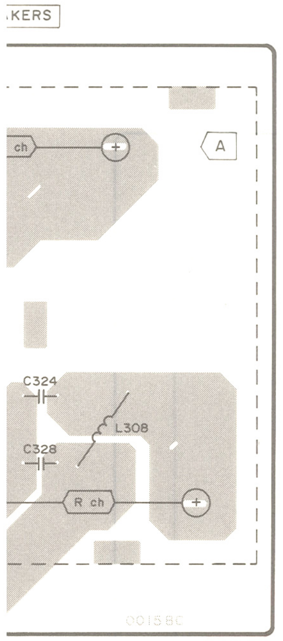
PHONES

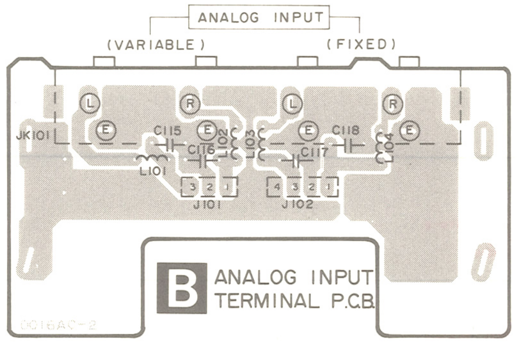

Q606
J751
IC751
Q604
Q602
J802
Q605
Q601
Q603
D451
(Left channel operation ind)
Q451
J302
D453
Q452
(S451)
Q307

SPEAKERS

1. OFF
2. A
3. B
4. A+B/BI-WIRING

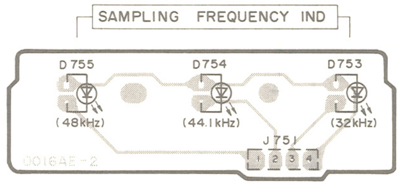
I SPEAKER (Rch) P.C.B.


KERS
ch
A
C324
C328
L308
R ch
0015BC

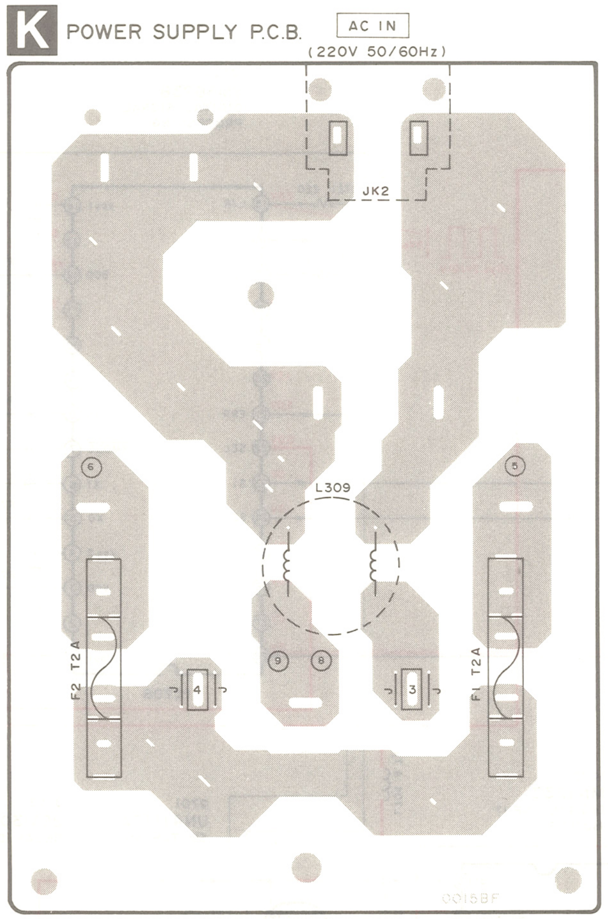

ANALOG INPUT
(VARIABLE)
(FIXED)
JK101
C115
C116
L102
L103
C117
C118
L101
J101
J102
0016AC-2

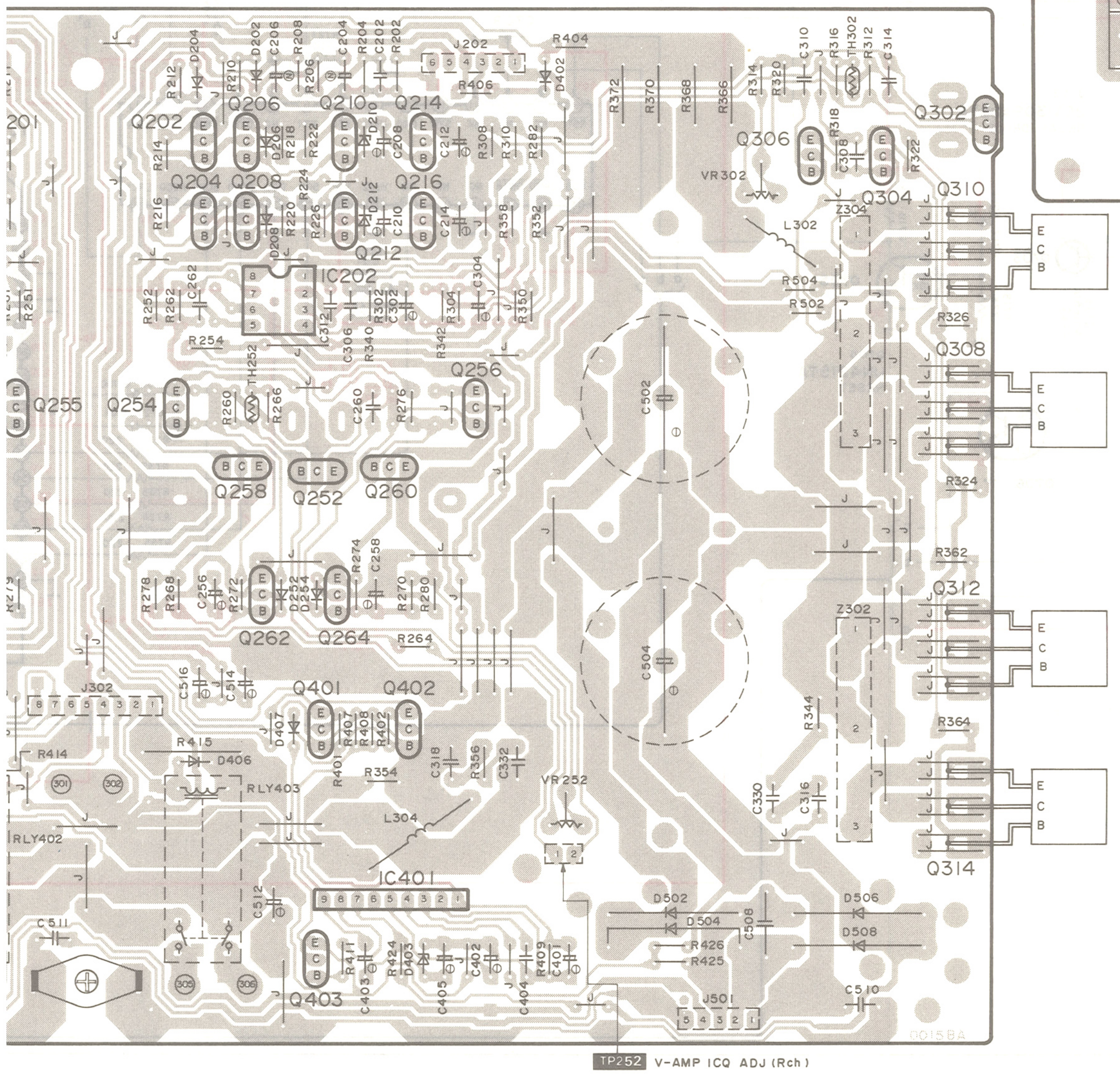
B ANALOG INPUT TERMINAL P.C.B.

C LED P.C.B.


SAMPLING FREQUENCY IND
D755
D754
D753
(48kHz)
(44.1kHz)
(32kHz)
J751
0016AF-2

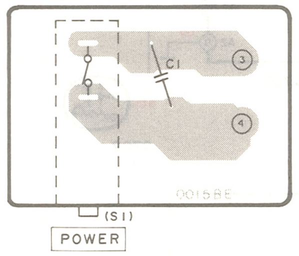
K POWER SUPPLY P.C.B.


AC IN
(220V 50/60Hz)
JK2
L309
F2 T2A
F1 T2A
0015BF

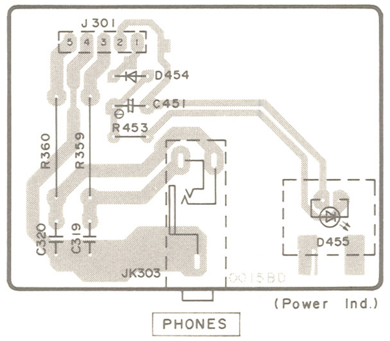

R212
D204
D202
C206
R208
C204
R204
C202
R202
J202
R404
R406
D402
R372
R370
R368
R366
R314
R320
C310
R316
TH302
R312
C314
Q302
Q202
Q206
Q210
Q214
Q306
VR302
Q204
Q208
Q216
Q304
Q310
Z304
L302
Q212
IC202
R504
R502
R326
Q308
R252
R262
C262
R254
TH252
Q256
C502
Q255
Q254
R260
R266
C260
R276
Q258
Q252
Q260
R324
R362
R274
C258
Q312
R278
R268
C256
R272
D254
D252
R270
R280
Z302
C504
Q262
Q264
R264
J302
C516
C514
Q401
Q402
R364
R344
R415
D406
D407
R414
R401
R407
R408
R402
RLY403
R354
C318
R356
C322
VR252
C330
C316
RLY402
L304
IC401
C512
C511
D502
D504
D506
D508
C508
R426
R425
R424
D403
C402
R403
C403
C405
C404
Q403
J501
C510
Q314
E
C
B
0015BA

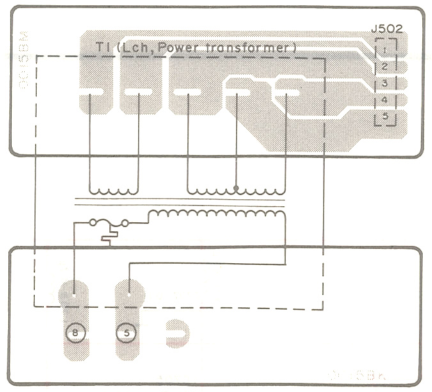
TP252 V-AMP ICQ ADJ (Rch)

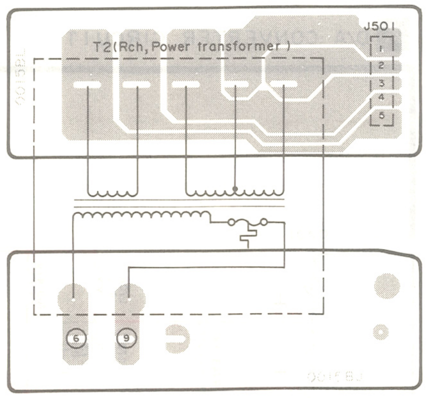
J POWER SWITCH P.C.B.


C1
(S1)
POWER
0015BE

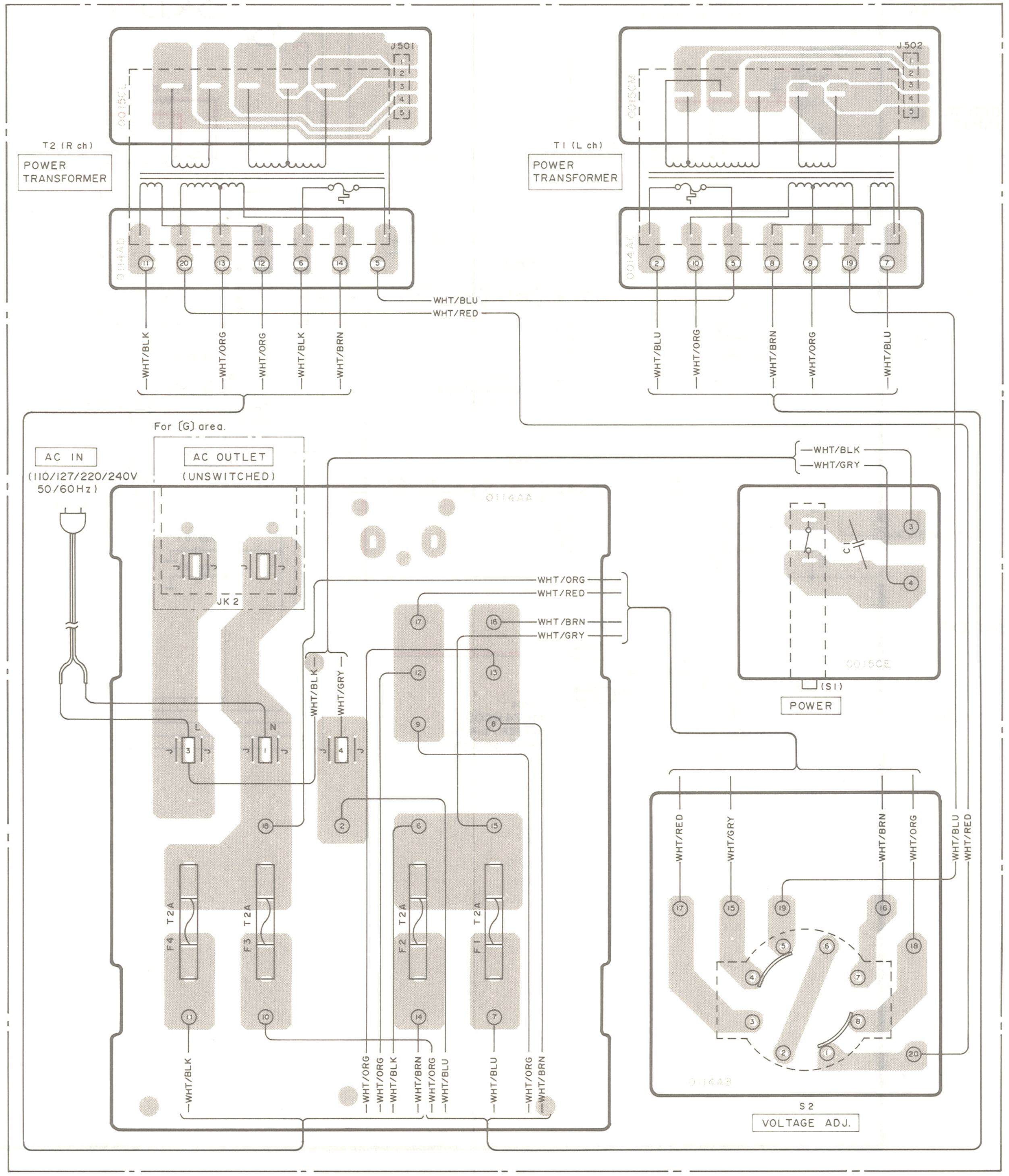
G HEADPHONES P.C.B.


J301
D454
C451
R453
R360
R359
C320
C319
JK303
D455
(Power Ind.)
PHONES
0015BB

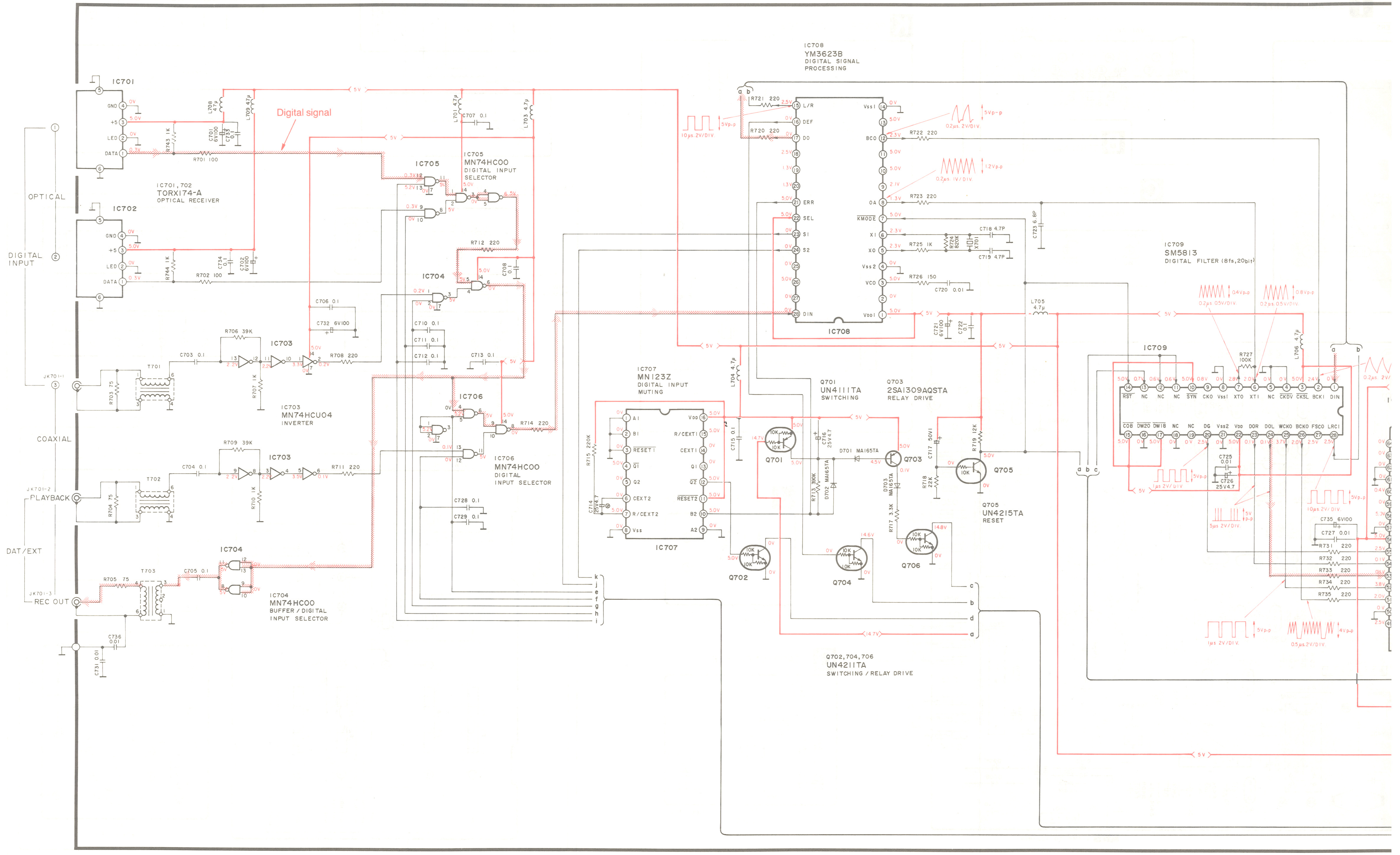

T1 (Lch, Power transformer)
J502

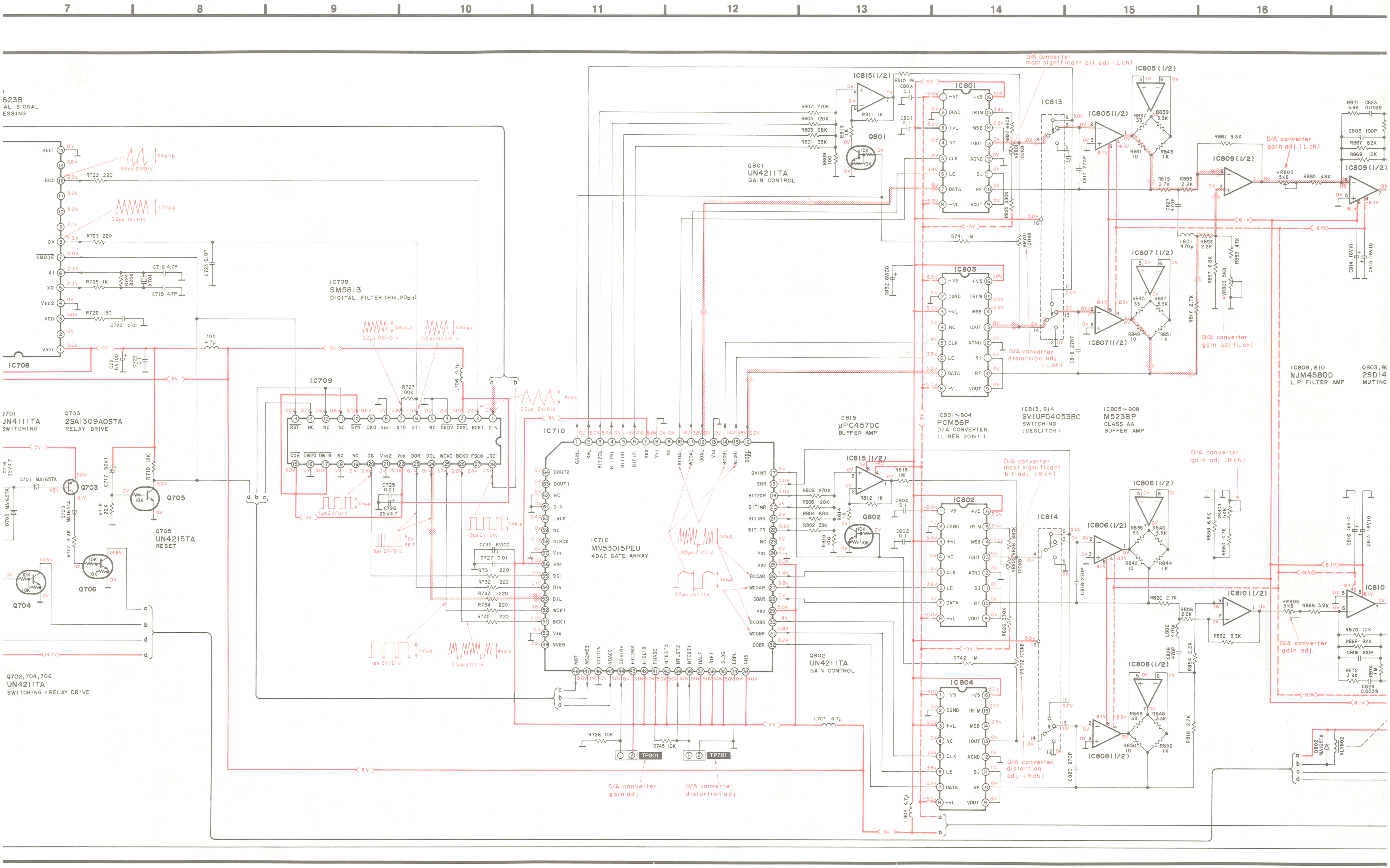

T2 (Rch, Power transformer)
J501

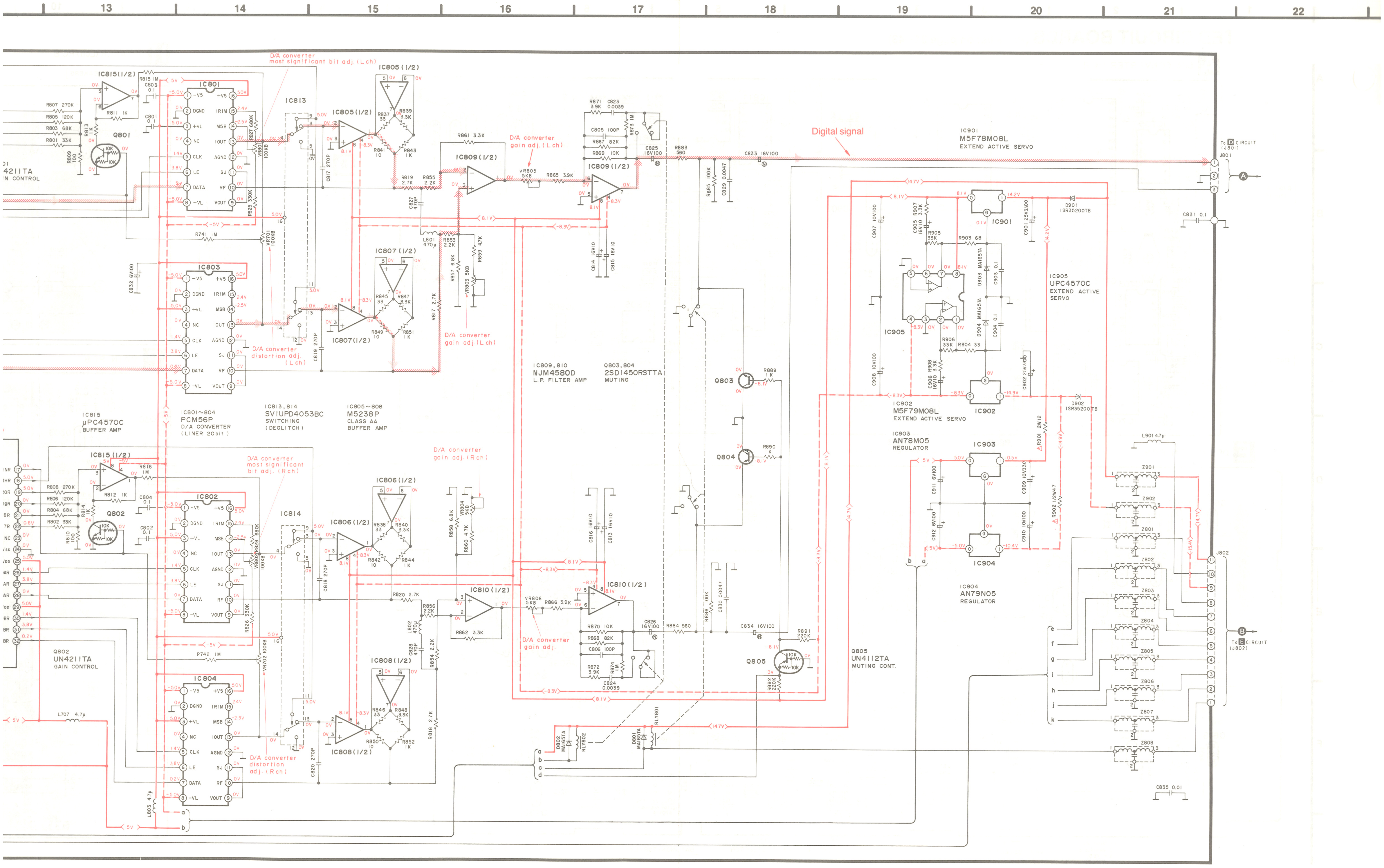
Power Source For [EB, G, GL] areas.


J501
J502
T2 (R ch)
POWER TRANSFORMER
T1 (L ch)
POWER TRANSFORMER
WHT/BLU
WHT/RED
WHT/BLK
WHT/ORG
WHT/BRN
For (G) area.
AC IN
(110/127/220/240V 50/60Hz)
AC OUTLET
(UNSWITCHED)
JK2
WHT/GRY
F4 T2A
F3 T2A
F2 T2A
F1 T2A
(S1)
POWER
S2
VOLTAGE ADJ.

A D/A CONVERTER CIRCUIT


IC701
IC702
IC701, 702
TORX174-A
OPTICAL RECEIVER
OPTICAL
DIGITAL INPUT
COAXIAL
PLAYBACK
DAT/EXT
REC OUT
JK701-1
JK701-2
JK701-3
Digital signal
IC705
MN74HC00
DIGITAL INPUT SELECTOR
IC704
IC703
MN74HCU04
INVERTER
IC706
MN74HC00
DIGITAL INPUT SELECTOR
IC704
MN74HC00
BUFFER / DIGITAL INPUT SELECTOR
T701
T702
T703
IC707
MN1123Z
DIGITAL INPUT MUTING
IC708
YM3623B
DIGITAL SIGNAL PROCESSING
Q701
UN4111TA
SWITCHING
Q703
2SA1309AQSTA
RELAY DRIVE
Q705
UN4215TA
RESET
Q702
Q704
Q706
Q702, 704, 706
UN4211TA
SWITCHING / RELAY DRIVE
D701 MA165TA
D702 MA165TA
D703 MA165TA
IC709
SM5813
DIGITAL FILTER (8fs, 20bit)
L705 4.7μ
L706 4.7μ
X701
5V


7
8
9
10
11
12
13
14
15
16
623B
AL SIGNAL
ESSING
IC708
IC709
SM5813
DIGITAL FILTER (8fs, 20bit)
IC710
MN53015PEU
4DAC GATE ARRAY
Q701
UN4111TA
SWITCHING
Q703
2SA1309AQSTA
RELAY DRIVE
Q705
UN4215TA
RESET
Q702, 704, 706
UN4211TA
SWITCHING / RELAY DRIVE
D701 MA165TA
D702 MA165TA
D703 MA165TA
L705 4.7μ
L706 4.7μ
L707 4.7μ
R727 100K
R728 10K
R745 10K
TP801
TP701
D/A converter gain adj.
D/A converter distortion adj.
IC815(1/2)
IC815
μPC4570C
BUFFER AMP
Q801
UN4211TA
GAIN CONTROL
Q802
UN4211TA
GAIN CONTROL
IC801
IC802
IC803
IC804
IC801~804
PCM56P
D/A CONVERTER
(LINER 20bit)
IC813
IC814
IC813, 814
SV1UPD4053BC
SWITCHING
(DEGLITCH)
IC805(1/2)
IC806(1/2)
IC807(1/2)
IC808(1/2)
IC805~808
M5238P
CLASS AA
BUFFER AMP
IC809(1/2)
IC810(1/2)
IC809, 810
NJM4580D
L.P. FILTER AMP
Q803, 8
2SD14
MUTING
D/A converter most significant bit adj. (Lch)
D/A converter most significant bit adj. (Rch)
D/A converter distortion adj. (Lch)
D/A converter distortion adj. (Rch)
D/A converter gain adj. (Lch)
D/A converter gain adj. (Rch)
D/A converter gain adj.
VR801 100KB
VR802 100KB
VR701 100KB
VR702 100KB
VR803 5KB
VR804 5KB
VR805 5KB
VR806 5KB
L801 470μ
L802 470μ
L803 4.7μ
D802 MA165TA
RLY802
5Vp-p
12Vp-p
0.2μs 2V/DIV.
0.2μs 1V/DIV.
0.2μs 0.5V/DIV.
1μs 2V/DIV.
10μs 2V/DIV.
5μs 2V/DIV.
0.5μs 2V/DIV.
0.5μs 2V/DIV.
4Vp-p
0.4Vp-p
0.8Vp-p
5V
-5V
14.7V
8.1V
-8.3V


13
14
15
16
17
18
19
20
21
22
IC815(1/2)
IC801
IC803
IC802
IC804
IC805(1/2)
IC807(1/2)
IC806(1/2)
IC808(1/2)
IC809(1/2)
IC810(1/2)
IC813
IC814
IC815(1/2)
Q801
Q802
Q803
Q804
Q805
IC901
IC902
IC903
IC904
IC905
D/A converter most significant bit adj.(Lch)
D/A converter most significant bit adj.(Rch)
D/A converter gain adj.(Lch)
D/A converter gain adj.(Rch)
D/A converter gain adj.
D/A converter distortion adj.(Lch)
D/A converter distortion adj.(Rch)
Digital signal
IC815
μPC4570C
BUFFER AMP
IC801~804
PCM56P
D/A CONVERTER
(LINER 20bit)
IC813,814
SVIUPD4053BC
SWITCHING
(DEGLITCH)
IC805~808
M5238P
CLASS AA
BUFFER AMP
IC809,810
NJM4580D
L.P. FILTER AMP
Q803,804
2SD1450RSTTA
MUTING
IC901
M5F78M08L
EXTEND ACTIVE SERVO
IC902
M5F79M08L
EXTEND ACTIVE SERVO
IC903
AN78M05
REGULATOR
IC904
AN79N05
REGULATOR
IC905
UPC4570C
EXTEND ACTIVE SERVO
Q802
UN4211TA
GAIN CONTROL
Q805
UN4112TA
MUTING CONT.
4211TA
IN CONTROL
D901
1SR35200TB
D902
1SR35200TB
RLY801
RLY802
D801
MA165TA
D802
MA165TA
D903
MA165TA
D904
MA165TA
To D CIRCUIT
(J801)
J801
To E CIRCUIT
(J802)
J802
A
B
L901 4.7μ
L707 4.7μ
L801 470μ
L802 470μ
L803 4.7μ
Z901
Z902
Z801
Z802
Z803
Z804
Z805
Z806
Z807
Z808
C831 0.1
C835 0.01
C833 16V100
C834 16V100
R883 560
R884 560
R889 1K
R890 1K
R891 220K
R892 220K
R871 3.9K
C823 0.0039
C805 100P
R867 82K
R869 10K
R873 1M
C825 16V100
R861 3.3K
VR805 5KB
R865 3.9K
R819 2.7K
R855 2.2K
C827 470P
R853 2.2K
R857 6.8K
VR803 5KB
R859 4.7K
R817 2.7K
R870 10K
R868 82K
C806 100P
R872 3.9K
R874 1M
C824 0.0039
C826 16V100
VR806 5KB
R866 3.9K
R862 3.3K
R820 2.7K
R856 2.2K
C828 470P
R854 2.2K
R818 2.7K
R858 6.8K
VR804 5KB
R860 4.7K
R837 33
R839 3.3K
R841 10
R843 1K
R845 33
R847 3.3K
R849 10
R851 1K
R838 33
R840 3.3K
R842 10
R844 1K
R846 33
R848 3.3K
R850 10
R852 1K
C817 270P
C819 270P
C818 270P
C820 270P
R807 270K
R805 120K
R803 68K
R801 33K
R813 1K
R809 100
R811 1K
R815 1M
C803 0.1
C801 0.1
R808 270K
R806 120K
R804 68K
R802 33K
R814 1K
R810 100
R812 1K
R816 1M
C804 0.1
C802 0.1
R827 680K
VR801 100KB
R825 330K
R741 1M
VR701 100KB
R828 680K
VR802 100KB
R826 330K
R742 1M
VR702 100KB
C832 6V100
C814 16V10
C815 16V10
C816 16V10
C813 16V10
R885 100K
C829 0.0047
R886 100K
C830 0.0047
C907 10V100
C908 10V100
R907 3.3K
C905 16V10
R905 33K
R903 68
R906 33K
R904 33
R908 3.3K
C906 16V10
C901 25V3300
C902 25V3300
C903 0.1
C904 0.1
R901 2W12
R902 1/2W47
C911 6V100
C912 6V100
C909 10V330
C910 10V100
-V5
DGND
+VL
NC
CLK
LE
DATA
-VL
+V5
IRIM
MSB
IOUT
AGND
SJ
RF
VOUT
5V
-5V
5.0V
-5.0V
8.1V
-8.1V
-8.3V
14.7V
14.2V
-14.9V
10.5V
-10.4V
0V
a
b
c
d
e
f
g
i
h
j
k

■ SCHEMATIC DIAGRAM (Parts list on page 34~43)

(This schematic diagram may be modified at any time with the development of new technology.)

●**S1:**	Power switch in "**on**" position.
●**S2:**	Voltage selector switch in "**220 V**" position. **(110 V/127 V/220 V/240 V)** for **EB**, **G** and **GL** areas.
●**S101:**	Input selector switch in "**digital**" position. **(digital/variable/fixed)**
●**S451:**	Speaker selector switch in "**off**" position. **(off/ A/B/ A+B bi-wiring)**
●**S701-1~S701-3:**	Digital input selector switches. **[S701-1:1, S701-1:2, S701-3:3]**
●**S701-4:**	DAT monitor switch in "**digital**" position. **(DAT in/digital)**

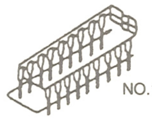
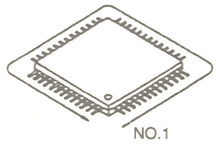
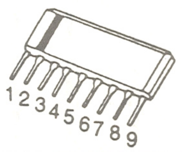
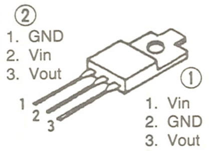
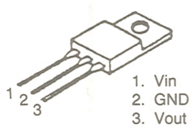
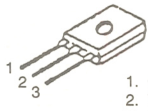
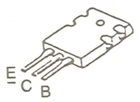
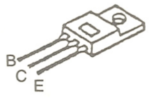
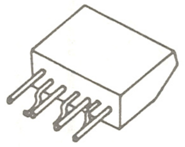
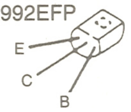
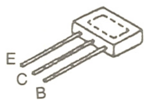
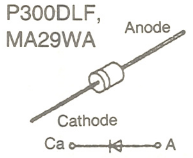
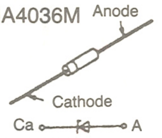
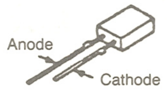
—< >—	Positive voltage line	- -< >- -	Negative voltage line
⋯⋯⇒	Digital signal	⇒	Analog signal

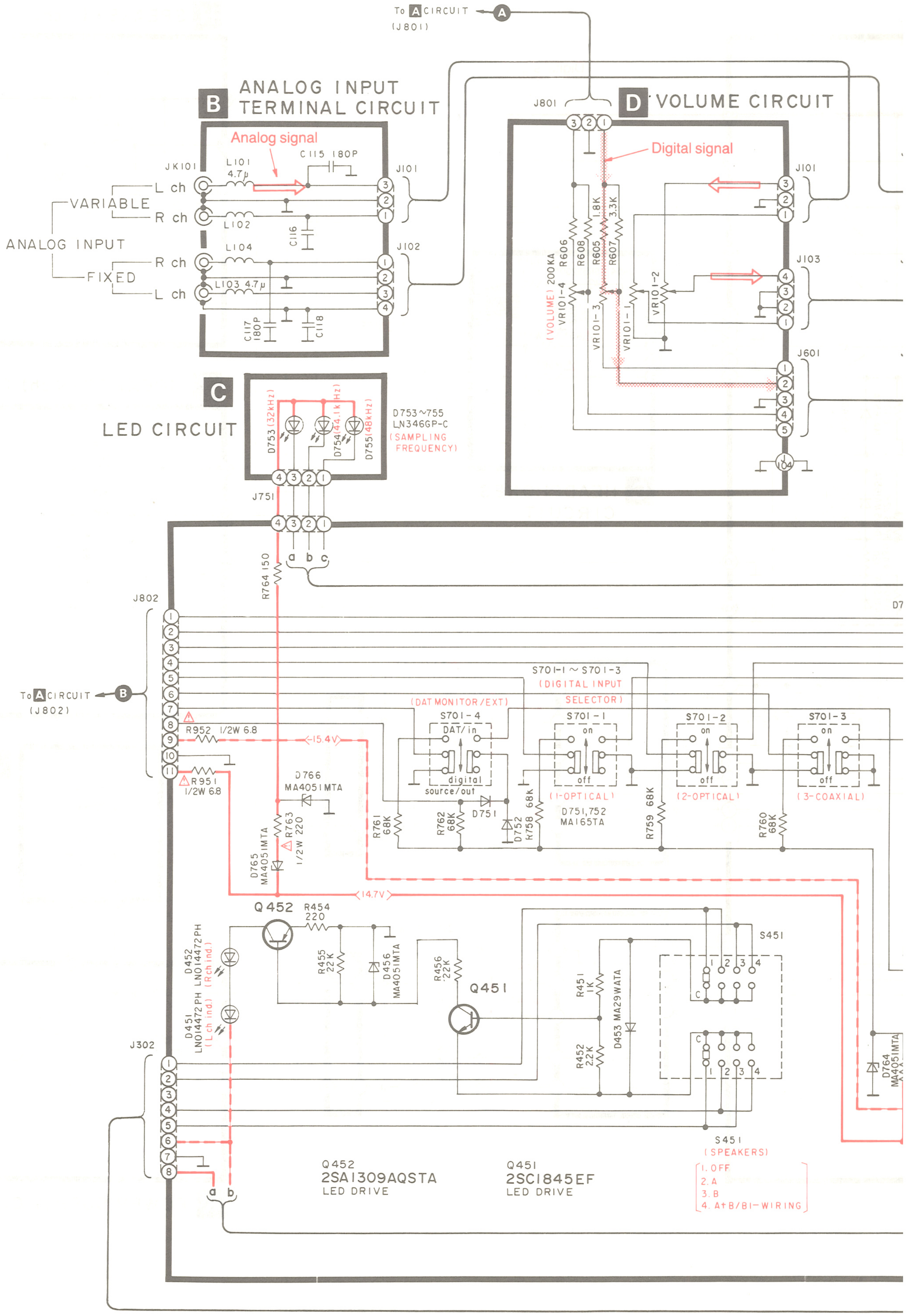
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

***Caution!**
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care furing repair.

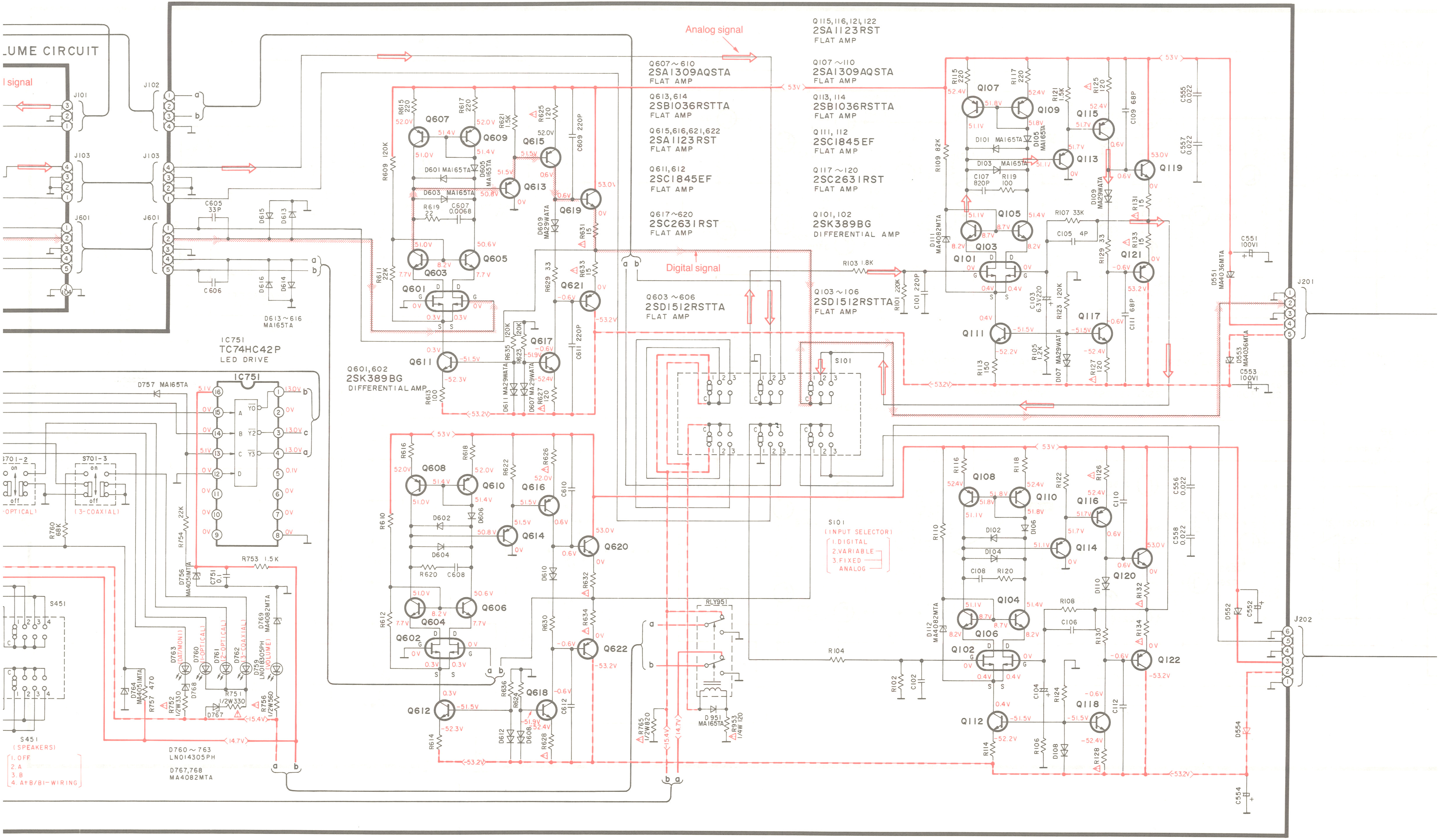
*Cover the parts boxes made of plastics with aluminum foil.
*Ground the soldering iron.
*Put a conductive mat on the work table.
*Do not touch the legs of IC or LSI with the fingers directly.

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

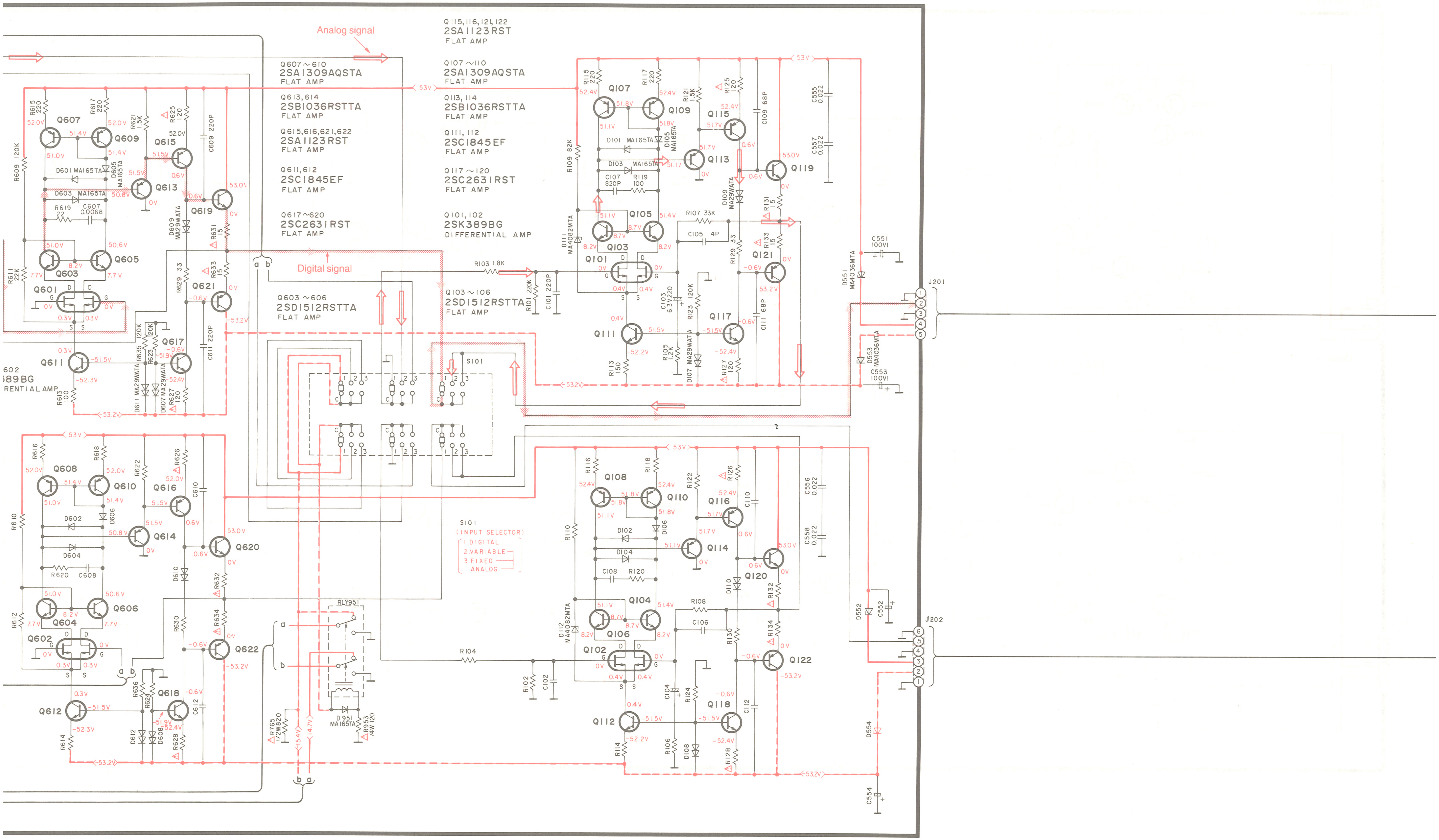
8 Pin: M5218P, M5238P, NJM4580D, UPC4570C 14 Pin: MIN74HCU04, MN74HC00 16 Pin: MN123Z, TC74HC42P, PCM56P, SVIUPD4053BC 28 Pin: YM3623B, SM5813	 NO.1	MN53015PEU 66 Pin  NO.1	AN7073 	① M5F78M08L ② M5F79M08L ② 1. GND 2. Vin 3. Vout ① 1. Vin 2. GND 3. Vout 	
AN78M05  1. Vin 2. GND 3. Vout	AN79N05  1. GND 2. Vin 3. Vout	2SC3182R 2SA1265R 	2SC3944AQRS 2SA1535AQRS 	2SK389BG 	2SC1845EF, 2SA1123R, 2SC2631R, 2SC1815BGL, 2SA992EFP 
 2SD1512R, 2SA1309A, 2SB1036R, 2SC3311A, UN4111, UN4211, UN4215, 2SD1450R, UN4112		MA165,MA167, 1SR35200TB, P300DLF, MA29WA  Anode Cathode Ca A	MA4082M, MA4180M, MA4051M, MA4036M  Anode Cathode Ca A	LN346GP-C  Anode Cathode	


To A CIRCUIT (J801)
B ANALOG INPUT TERMINAL CIRCUIT
Analog signal
JK101
L101 4.7μ
C115 180P
L102
L104
L103 4.7μ
C116
C117 180P
C118
VARIABLE
FIXED
ANALOG INPUT
L ch
R ch
J101
J102
D VOLUME CIRCUIT
J801
Digital signal
J103
J601
R606 200KA
R608 1.8K
R605
R607 3.3K
(VOLUME) VR101-4
VR101-3
VR101-1
VR101-2
C LED CIRCUIT
D753 (32kHz)
D754 (44.1kHz)
D755 (48kHz)
D753~755 LN346GP-C (SAMPLING FREQUENCY)
J751
R764 150
a b c
J802
To A CIRCUIT (J802)
R952 1/2W 6.8
R951 1/2W 6.8
15.4V
D766 MA4051MTA
R763 1/2W 220
D765 MA4051MTA
R761 68K
R762 68K
R758 68K
D752
D751
D751,752 MA165TA
R759 68K
R760 68K
S701-1 ~ S701-3 (DIGITAL INPUT SELECTOR)
(DAT MONITOR/EXT)
S701-4
DAT/in
digital
source/out
S701-1
(1-OPTICAL)
S701-2
(2-OPTICAL)
S701-3
(3-COAXIAL)
on
off
14.7V
Q452
R454 220
R455 22K
D456 MA4051MTA
R456 22K
Q451
D452 LN01447 2PH (R ch ind)
D451 LN01447 2PH (L ch ind)
R451 1K
R452 22K
D453 MA29WATA
S451
D764 MA4051MTA
J302
Q452 2SA1309AQSTA LED DRIVE
Q451 2SC1845EF LED DRIVE
S451 (SPEAKERS) 1. OFF 2. A 3. B 4. A+B/BI-WIRING
D7

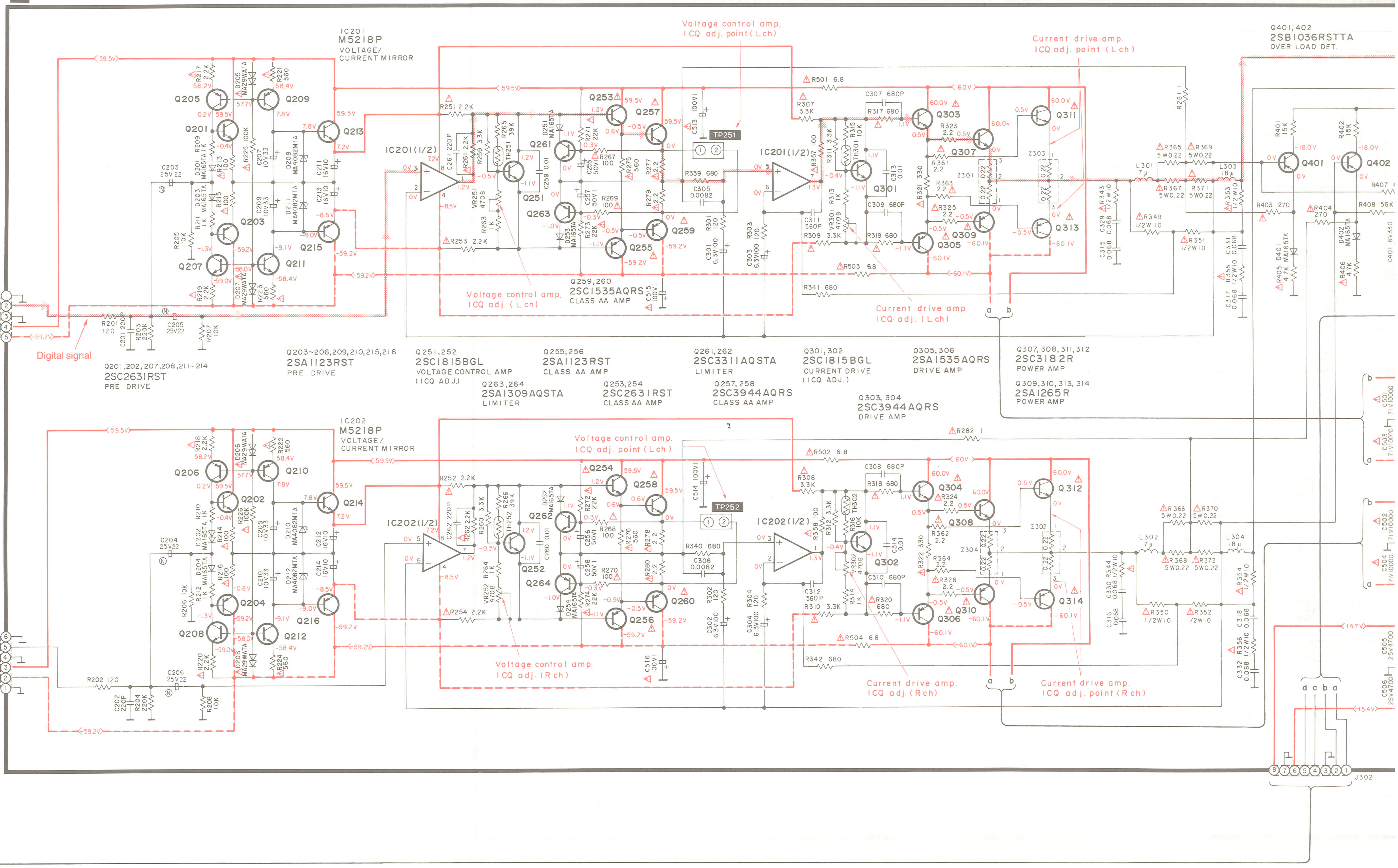
E OPERATION CIRCUIT

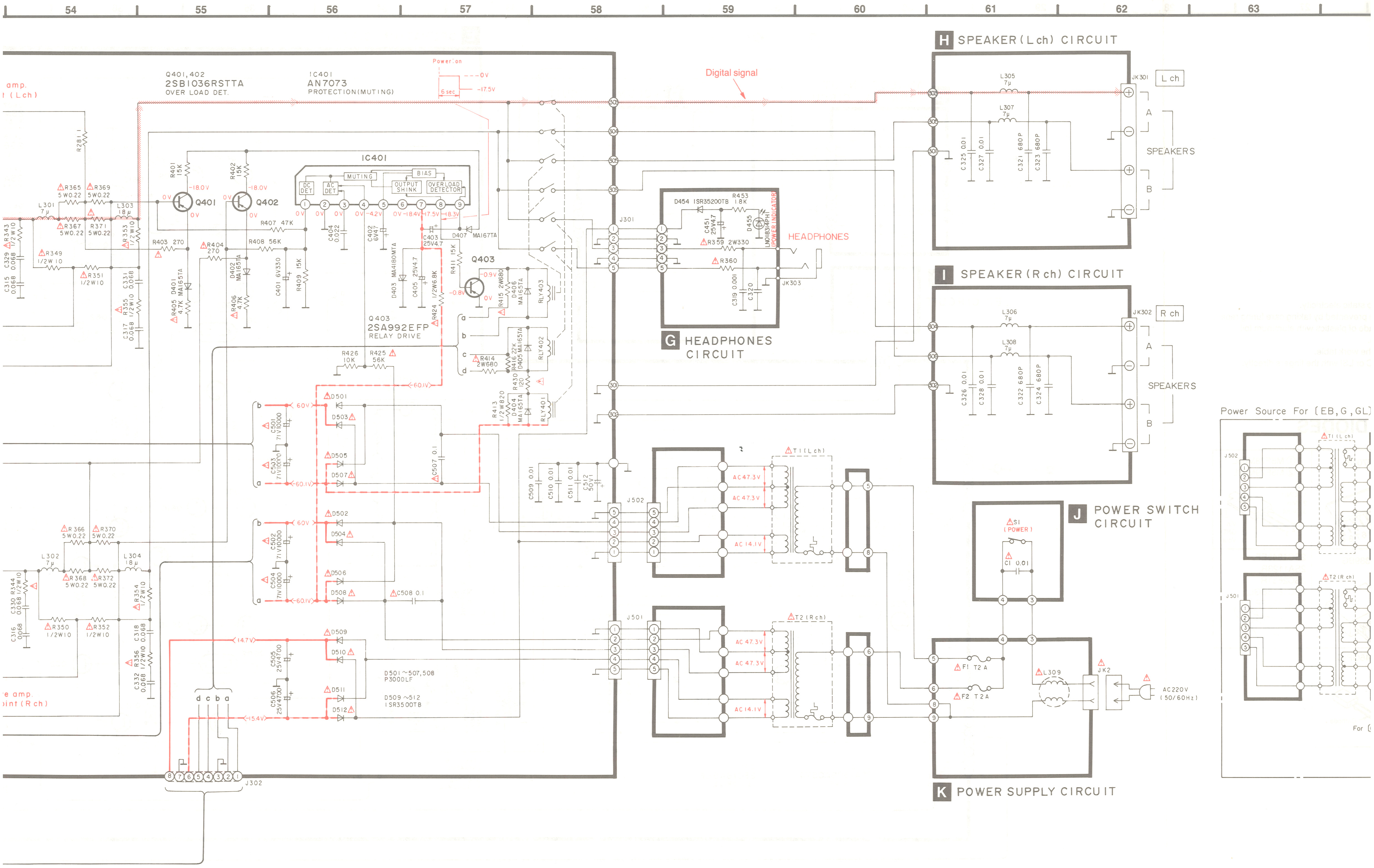


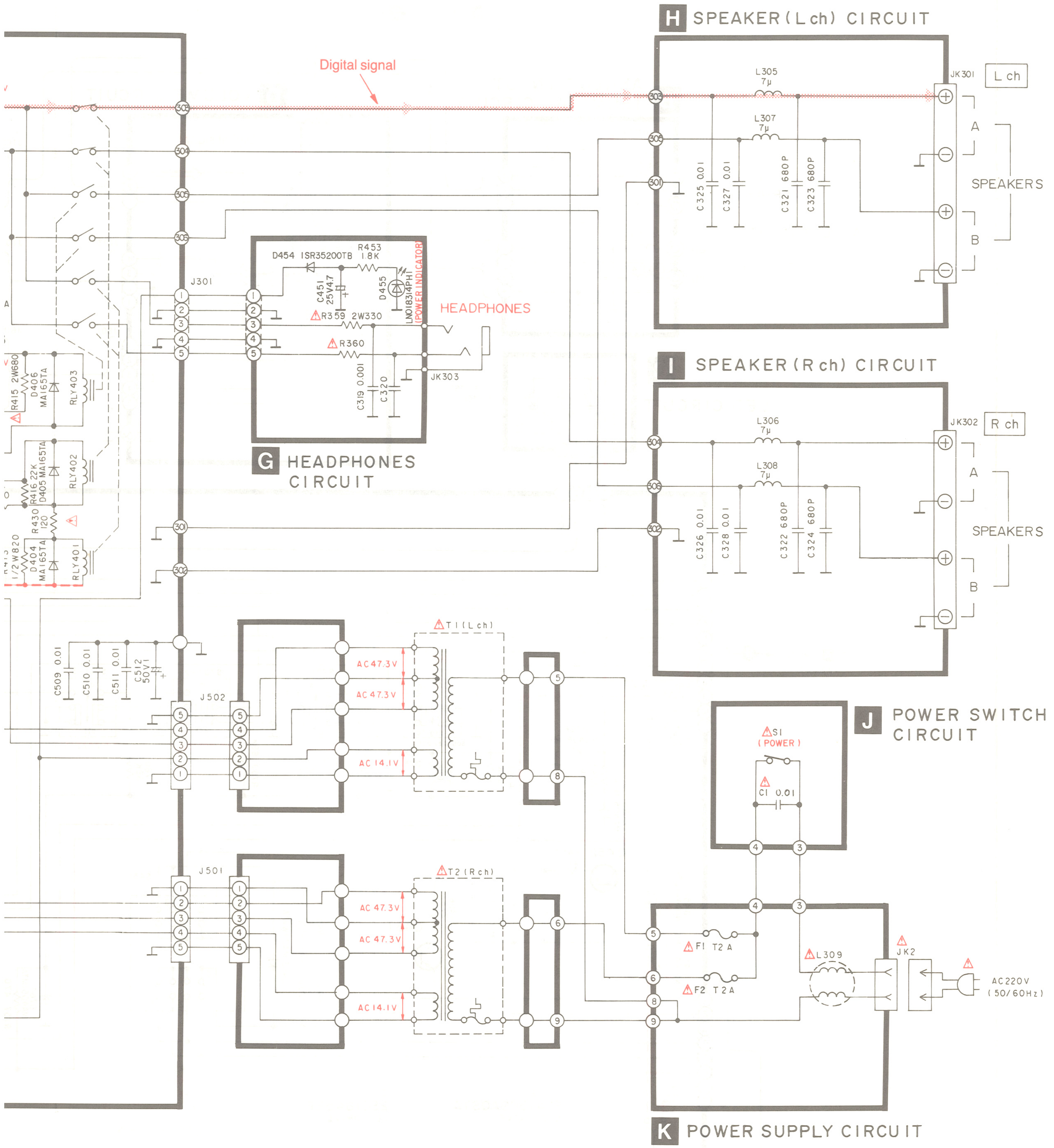
LUME CIRCUIT
l signal
J101
J102
J103
J601
Analog signal
Digital signal
Q115,116,121,122
2SA1123RST
FLAT AMP
Q607～610
2SA1309AQSTA
FLAT AMP
Q613,614
2SB1036RSTTA
FLAT AMP
Q615,616,621,622
2SA1123RST
FLAT AMP
Q611,612
2SC1845EF
FLAT AMP
Q617～620
2SC2631RST
FLAT AMP
Q107～110
2SA1309AQSTA
FLAT AMP
Q113,114
2SB1036RSTTA
FLAT AMP
Q111,112
2SC1845EF
FLAT AMP
Q117～120
2SC2631RST
FLAT AMP
Q101,102
2SK389BG
DIFFERENTIAL AMP
Q603～606
2SD1512RSTTA
FLAT AMP
Q103～106
2SD1512RSTTA
FLAT AMP
Q601,602
2SK389BG
DIFFERENTIAL AMP
IC751
TC74HC42P
LED DRIVE
D613～616
MA165TA
S101
(INPUT SELECTOR)
1.DIGITAL
2.VARIABLE
3.FIXED
ANALOG
S451
(SPEAKERS)
1.OFF
2.A
3.B
4.A+B/BI-WIRING
S701-2
S701-3
(OPTICAL)
(3-COAXIAL)
D760～763
LN01430SPH
D767,768
MA4082MTA
RLY951
J201
J202
Q601 Q602 Q603 Q604 Q605 Q606 Q607 Q608 Q609 Q610 Q611 Q612 Q613 Q614 Q615 Q616 Q617 Q618 Q619 Q620 Q621 Q622
Q101 Q102 Q103 Q104 Q105 Q106 Q107 Q108 Q109 Q110 Q111 Q112 Q113 Q114 Q115 Q116 Q117 Q118 Q119 Q120 Q121 Q122
53V
-53.2V
D763 (DAT/MONI)
D760 (1-OPTICAL)
D761 (2-OPTICAL)
D762 (3-COAXIAL)
D759 LN01305PH (VOLUME)


Analog signal
Digital signal
Q607～610
2SA1309AQSTA
FLAT AMP
Q613, 614
2SB1036RSTTA
FLAT AMP
Q615,616,621,622
2SA1123RST
FLAT AMP
Q611,612
2SC1845EF
FLAT AMP
Q617～620
2SC2631RST
FLAT AMP
Q603～606
2SD1512RSTTA
FLAT AMP
Q115,116,121,122
2SA1123RST
FLAT AMP
Q107～110
2SA1309AQSTA
FLAT AMP
Q113, 114
2SB1036RSTTA
FLAT AMP
Q111, 112
2SC1845EF
FLAT AMP
Q117～120
2SC2631RST
FLAT AMP
Q101, 102
2SK389BG
DIFFERENTIAL AMP
Q103～106
2SD1512RSTTA
FLAT AMP
602
389BG
RENTIAL AMP
S101
(INPUT SELECTOR)
1. DIGITAL
2. VARIABLE
3. FIXED
ANALOG
RLY951
D951 MA165TA
R953 1/4W 120
R765 1/2W 820
15.4V
14.7V
J201
J202
D551 MA4036MTA
D553 MA4036MTA
D552
D554
C551 100V1
C553 100V1
C552
C554
C555 0.022
C557 0.022
C556 0.022
C558 0.022
53V
-53.2V
-53V
-53.2V
Q601 Q602 Q603 Q604 Q605 Q606 Q607 Q608 Q609 Q610 Q611 Q612 Q613 Q614 Q615 Q616 Q617 Q618 Q619 Q620 Q621 Q622
Q101 Q102 Q103 Q104 Q105 Q106 Q107 Q108 Q109 Q110 Q111 Q112 Q113 Q114 Q115 Q116 Q117 Q118 Q119 Q120 Q121 Q122
R615 220
R617 220
R621 1.5K
R625 120
C609 220P
R609 120K
D601 MA165TA
D603 MA165TA
D605 MA165TA
R619 22
C607 0.0068
D609 MA29WATA
R631 15
R611 22K
R629 33
R633 15
C611 220P
R635 120K
R623 120K
R613 100
D611 MA29WATA
D607 MA29WATA
R627 120
R115 220
R117 220
R121 1.5K
R125 120
C109 68P
R109 82K
D101 MA165TA
D103 MA165TA
D105 MA165TA
C107 820P
R119 100
D109 MA29WATA
R107 33K
C105 4P
R129 33
R131 15
R133 15
D111 MA4082MTA
R103 1.8K
R101 220K
C101 220P
C103 6.3V220
R123 120K
C111 68P
R113 150
R105 1.2K
D107 MA29WATA
R127 120
D112 MA4082MTA
R104
R102
C102
C104
R124
R106
D108
R114
R128
R130
R134
R132
R108
C106
C108
R120
D102
D104
D106
D110
C110
C112
R110
R116
R118
R122
R126
R616
R618
R622
R626
C610
R610
D602
D604
D606
R620
C608
R612
R630
R632
R634
D610
R636
R624
R628
R614
D612
D608
C612
52.0V 51.4V 51.0V 52.0V 51.5V 50.8V 0.6V 53.0V 0V 8.2V 7.7V 0.3V -0.6V -51.5V -52.3V -51.9V -52.4V
52.4V 51.8V 51.1V 51.7V 53.0V 0.6V 8.7V 8.2V 0.4V -0.6V 53.2V -51.5V -52.2V -52.4V
a b
1 2 3 C
1 2 3 4 5
6 5 4 3 2 1

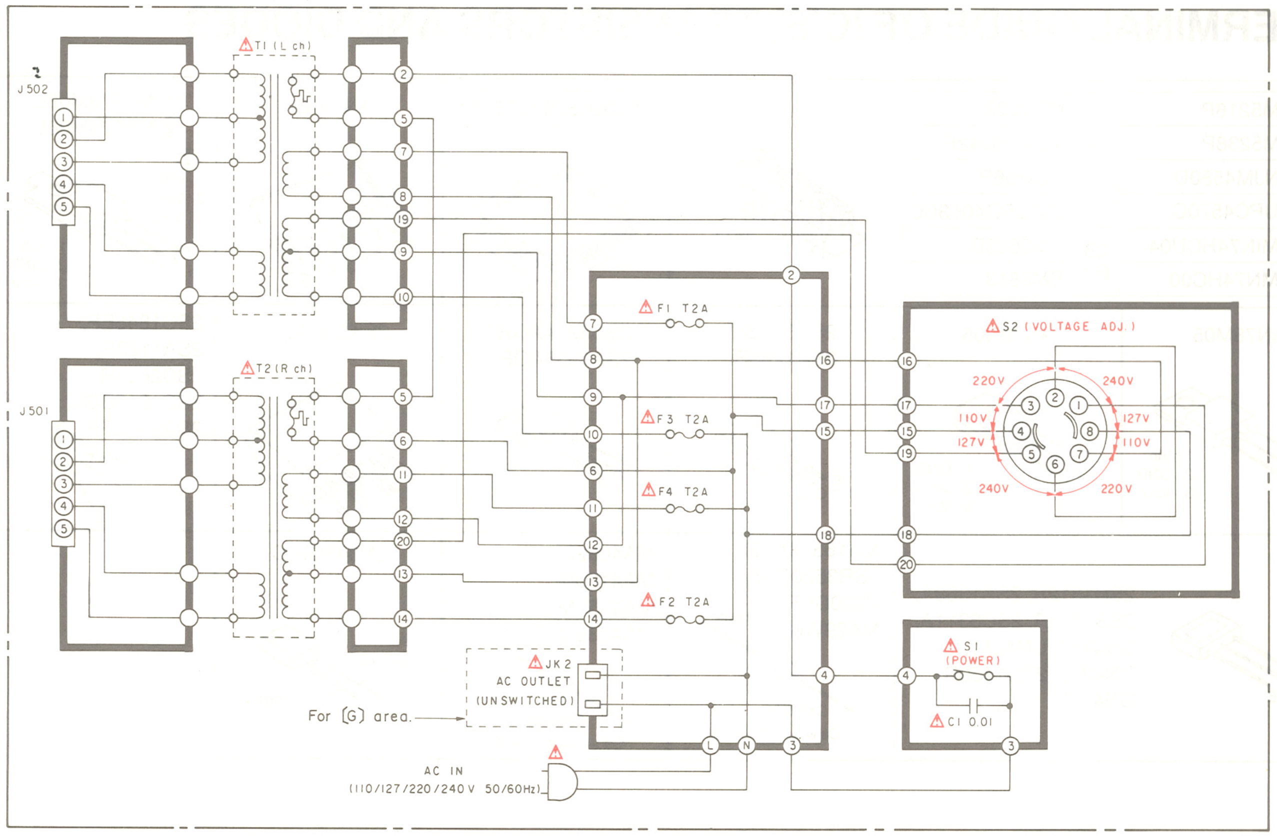
F MAIN CIRCUIT


IC201
M5218P
VOLTAGE/
CURRENT MIRROR
IC201(1/2)
IC201(1/2)
IC202
M5218P
VOLTAGE/
CURRENT MIRROR
IC202(1/2)
IC202(1/2)
Voltage control amp.
ICQ adj. point (Lch)
Voltage control amp.
ICQ adj. (Lch)
Voltage control amp.
ICQ adj. point (Lch)
Voltage control amp.
ICQ adj. (Rch)
Current drive amp.
ICQ adj. point (Lch)
Current drive amp
ICQ adj. (Lch)
Current drive amp.
ICQ adj. (Rch)
Current drive amp.
ICQ adj. point (Rch)
Q401, 402
2SB1036RSTTA
OVER LOAD DET.
Digital signal
J201
J202
J302
TP251
TP252
Q201 Q202 Q203 Q204 Q205 Q206 Q207 Q208 Q209 Q210 Q211 Q212 Q213 Q214 Q215 Q216
Q251 Q252 Q253 Q254 Q255 Q256 Q257 Q258 Q259 Q260 Q261 Q262 Q263 Q264
Q301 Q302 Q303 Q304 Q305 Q306 Q307 Q308 Q309 Q310 Q311 Q312 Q313 Q314
Q401 Q402
TH251 TH252 TH301 TH302
VR251 470B VR252 470B VR301 470B VR302 470B
L301 7μ L302 7μ L303 18μ L304 18μ
Z301 Z302 Z303 Z304
59.5V 59.2V 60V 60.1V 14.7V 15.4V
Q201, 202, 207, 208, 211~214
2SC2631RST
PRE DRIVE
Q203~206, 209, 210, 215, 216
2SA1123RST
PRE DRIVE
Q251, 252
2SC1815BGL
VOLTAGE CONTROL AMP
(ICQ ADJ.)
Q263, 264
2SA1309AQSTA
LIMITER
Q255, 256
2SA1123RST
CLASS AA AMP
Q253, 254
2SC2631RST
CLASS AA AMP
Q259, 260
2SC1535AQRS
CLASS AA AMP
Q261, 262
2SC3311AQSTA
LIMITER
Q257, 258
2SC3944AQRS
CLASS AA AMP
Q301, 302
2SC1815BGL
CURRENT DRIVE
(ICQ ADJ.)
Q303, 304
2SC3944AQRS
DRIVE AMP
Q305, 306
2SA1535AQRS
DRIVE AMP
Q307, 308, 311, 312
2SC3182R
POWER AMP
Q309, 310, 313, 314
2SA1265R
POWER AMP


54
55
56
57
58
59
60
61
62
63
H SPEAKER (L ch) CIRCUIT
I SPEAKER (R ch) CIRCUIT
G HEADPHONES CIRCUIT
J POWER SWITCH CIRCUIT
K POWER SUPPLY CIRCUIT
Digital signal
Power on
6 sec
0V
-17.5V
Q401,402
2SB1036RSTTA
OVER LOAD DET.
IC401
AN7073
PROTECTION (MUTING)
MUTING
BIAS
DC DET
AC DET
OUTPUT SHINK
OVERLOAD DETECTOR
Q401
Q402
Q403
2SA992EFP
RELAY DRIVE
R401 15K
R402 15K
R281 I
R365 5W0.22
R369 5W0.22
R367 5W0.22
R371 5W0.22
L301 7μ
L303 18μ
R343 1/2W10
C329 0.068
C315 0.068
R349 1/2W10
R351 1/2W10
R353 1/2W10
R355 1/2W10
C331 0.068
C317 0.068
R403 270
R404 270
R407 47K
R408 56K
D401 MA165TA
D402 MA165TA
R405 4.7K
R406 4.7K
C401 6V330
R409 15K
C404 0.022
C402 6V47
D403 MA4180MTA
C405 25V4.7
C403 25V4.7
D407 MA167TA
R411 15K
R424 1/2W6.8K
R415 2W680
D406 MA165TA
RLY403
RLY402
RLY401
R416 22K
D405 MA165TA
R414 2W680
R430 120
R413 1/2W820
D404 MA165TA
R426 10K
R425 56K
a
b
c
d
D501
D503
D505
D507
D502
D504
D506
D508
D509
D510
D511
D512
C501 71V10000
C503 71V10000
C502 71V10000
C504 71V10000
C505 25V4700
C506 25V4700
C507 0.1
C508 0.1
60V
-60.1V
14.7V
-15.4V
D501~507,508 P300DLF
D509~512 1SR350OTB
C509 0.01
C510 0.01
C511 0.01
C512 50V1
J301
J302
J501
J502
D454 1SR35200TB
R453 1.8K
C451 25V47
D455 LN01834PHT
POWER INDICATOR
R359 2W330
R360
C319 0.001
C320
JK303
HEADPHONES
L305 7μ
L307 7μ
C325 0.01
C327 0.01
C321 680P
C323 680P
JK301
L ch
A
B
SPEAKERS
L306 7μ
L308 7μ
C326 0.01
C328 0.01
C322 680P
C324 680P
JK302
R ch
T1 (L ch)
T2 (R ch)
AC 47.3V
AC 14.1V
S1 (POWER)
C1 0.01
F1 T2 A
F2 T2 A
L309
JK2
AC220V (50/60Hz)
Power Source For (EB,G,GL)
amp. (L ch)
amp. (R ch)
R366 5W0.22
R370 5W0.22
R368 5W0.22
R372 5W0.22
L302 7μ
L304 18μ
R344 1/2W10
C330 0.068
R350 1/2W10
R352 1/2W10
R354 1/2W10
R356 1/2W10
C318 0.068
C332 0.068
C316 0.068
For


H SPEAKER (L ch) CIRCUIT
Digital signal
L305 7μ
L307 7μ
C325 0.01
C327 0.01
C321 680P
C323 680P
JK301
L ch
A
B
SPEAKERS
J301
D454 1SR35200TB
R453 1.8K
C451 25V47
D455
LN01834PHI (POWER INDICATOR)
R359 2W330
R360
C319 0.001
C320
JK303
HEADPHONES
G HEADPHONES CIRCUIT
I SPEAKER (R ch) CIRCUIT
L306 7μ
L308 7μ
C326 0.01
C328 0.01
C322 680P
C324 680P
JK302
R ch
R415 2W680
D406 MA165TA
RLY403
R416 22K
D405 MA165TA
RLY402
R430 120
D404 MA165TA
RLY401
C509 0.01
C510 0.01
C511 0.01
C512 50V1
J502
T1 (L ch)
AC 47.3V
AC 47.3V
AC 14.1V
J501
T2 (R ch)
AC 47.3V
AC 47.3V
AC 14.1V
S1 (POWER)
C1 0.01
J POWER SWITCH CIRCUIT
F1 T2A
F2 T2A
L309
JK2
AC220V (50/60Hz)
K POWER SUPPLY CIRCUIT

Power Source For (EB, G, GL) areas.


J502
J501
T1 (L ch)
T2 (R ch)
F1 T2A
F3 T2A
F4 T2A
F2 T2A
S2 (VOLTAGE ADJ.)
220V
240V
110V
127V
240V
220V
S1 (POWER)
C1 0.01
JK2
AC OUTLET (UNSWITCHED)
For (G) area.
AC IN (110/127/220/240V 50/60Hz)

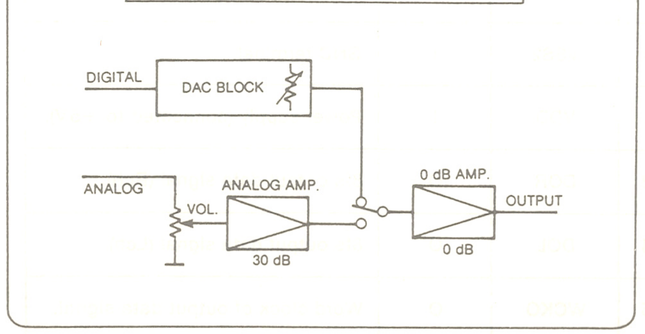
■ DIGITAL DIRECT-DRIVE CIRCUITRY

The various sound sources that we enjoy today are making steady progress toward digitalization. Technics, too, has been making remarkable progress in the field of digitalization, using the vast resources of its digital technology know-how to develop this digital power amplifier equipped with "*Digital Direct Drive*" circuitry ... new circuitry designed to display to the maximum degree the features of digital sound sources.

This "*Digital Direct Drive*" circuitry is designed so that the output of the DAC (digital/analog converters) is input directly to the voltage amplification gain 1 (0 dB) power amplifier. (Fig. 1)

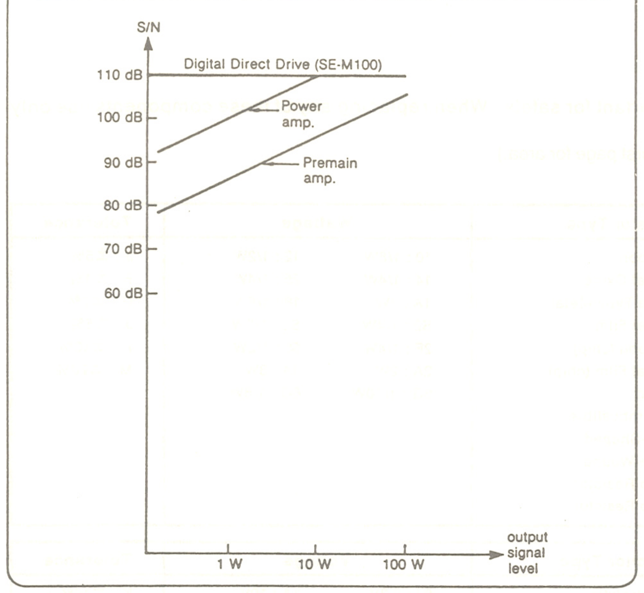
As a result, Technics has come close to the ultimate ideal for a digital amplifier: to make the analog signal path as short as possible.

Fig. 1: Digital Direct-Drive Configuration



In addition, there are of course a number of specific aspects that must be considered for the reproduction of a digital sound source, and one of those which is very important is the avoidance of a deterioration of the signal-to-noise (S/N) ratio during reproduction at a low volume level. The reason for this is, due to an amplification degree of "1" for the power amplifier, that when the volume control is used to reduce the signal level (S), the noise level (N) also drops accordingly. (Fig. 2)

Fig. 2: Comparison of signal-to-Noise (S/N) Characteristics



Furthermore, the expressive capability of music is also greatly improved as a result of the application of such leading technology as the 4-DAC linear 20-bit 8-fold oversampling system (described at the right) employed in the DAC stage for processing of even very minute signals.

As a result of such technology, the excellence of digital sources can be satisfactorily extracted and reproduced to an extent that is quite appropriate to this age of digital audio.

■ 4-DAC linear 20-bit 8-fold oversampling system

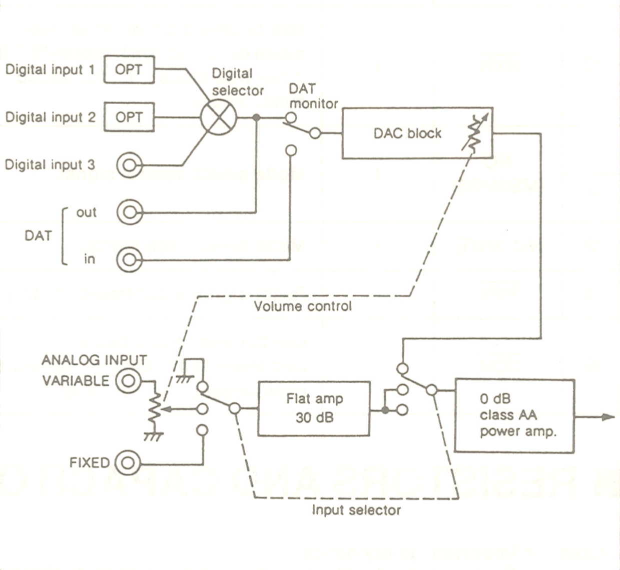
• Four non-zero-cross DACs

The problem of zero-cross distortion has been resolved through the employment of a total of four digital/audio converters, one each for the positive signal and negative signal for each (left and right) channel.

• High-resolution linear 20-bit 8-fold oversampling

Through the use of a highly precise 20-bit 8-fold oversampling digital filter, 20-bit high-resolution operation has now become a reality. In addition, the reproduction capability for very minute signals has been greatly improved, and phase distortion has been suppressed to the minimum limit.

SE-M100 Block Diagram



■ FUNCTIONS OF IC TERMINALS

•IC708 (YM3623B) DIGITAL INTERFACE RECEPTION

(PU) terminals are "pulled up".

Pin No.	Terminal Name	I/O	Function
1	VDD1	——	This is the power connection terminal (+5 V).
2	ADJ	I	This terminal is for the adjustment of the VCO oscillation frequency, but it is not used in this unit.
3	VCO	I/O	This is the external condenser terminal for the VCO circuitry.
4	VSS2	——	This is the ground connection terminal of the system.
5	XO	O	This is the output terminal for the crystal vibrator (16.9344 MHz).
6	XI	I	This is the input terminal for the crystal vibrator.
7	KMODE	I (PU)	At a high level...the PLL circuitry is activated when the DIN terminal receives an input signal. Otherwise, the crystal vibrator is activated. At a low level...the crystal vibrator is activated, regardless of the DIN terminal input.
8	∅A	O	This terminal outputs a 16.9344-MHz frequency when the crystal vibrator functions. When the PLL circuitry is activated, the frequency varies according to the speed of input data of the DIN terminal (fs=about 16.9344 MHz when it is 44.2 kHz).
9	∅B	O	The frequency of this terminal is divided into a third of that of terminal ∅A when the crystal vibrator functions. When the PLL circuitry is activated, the frequency varies according to the speed of input data of the DIN terminal (fs=about 16.9344 when it is 44.2 kHz).
10	T1	I (PU)	This is the input terminal for checking the internal circuitry.
11	T2	I (PU)	This is the input terminal for checking the internal circuitry.
12	BCO	O	Used to output the time-clock signal from the DO terminal.
13	SYNC	O	Used to output the synchronization signal.
14	VSS1	O	This is the ground connection terminal of the system (+0 V).
15	L/R	O	At a high level...data on the left channel is output from the DO terminal. At a low level...data on the right channel is output from the DO terminal.
16	DEF	O	At a high level...input data is emphasized. At a low level...input data is not emphasized.
17	DO	O	Outputs 16-bit data.
18	WC	O	This is the terminal for checking data output to the DO terminal.
19	DIGR	O	This terminal outputs the signal for the right channel.
20	DIGL	O	This terminal outputs the signal for the left channel.
21	ERR	O	Error detection terminal. H=Error is found during parity check L=No errors
22	SEL	I (PU)	
23	S1	O	
24	S2	O	
25	SCK	O	Terminal for the clock-signal of the sub code output.
26	SSYNC	O	For the signal of the sub code.
27	SDO	O	For the output of sub code data.
28	DIN	I (PU)	For the input of data.

Input	Output		Output	
SEL	S1	Function	S2	Function
L	L	Copying is not possible	L	DC (except DAT)
	H	Copying is possible	H	DAT
H	L		L	The sampling frequency of the DIN input signal is 44.1 kHz.
	L		H	48 kHz
	H		H	32 kHz
	H		L	——

●IC410 (MN53015PEU): 4DAC gate array

Pin No.	Mark	I/O Division	Function
1	GAINL	O	Gain select signal (Lch). [High signal (0∼−42dB): "H" Low signal (less than −42dB): "L"]
2	SHL	O	Sampling hold signal (Lch). [At sampling: "H" At hold: "L"]
3	BIT20L	O	Output signal of 20 bits (Lch).
4	BIT19L	O	Output signal of 19 bits (Lch).
5	BIT18L	O	Output signal of 18 bits (Lch).
6	BIT17L	O	Output signal of 17 bits (Lch).
7	VDD	I	Power supply (connected to +5V).
8	VSS	I	GND terminal.
9	NC	—	Not connected.
10	BCOAL	O	Bit clock of DOAL data signal.
11	WCOAL	O	Word clock of DOAL data signal.
12	DOAL	O	Input data signal to (+) DAC (Lch).
13	VSS	I	GND terminal.
14	BCOBL	O	Bit clock of DOBL data signal.
15	WCOBL	O	Word clock of DOBL data signal.
16	DOBL	O	Input data signal to (−) DAC (Lch).
17	GAINR	O	Gain select signal (Rch). [High signal (0∼−42dB): "H" Low signal (less than −42dB): "L"]
18	SHR	O	Sampling hold signal (Rch). [At sampling: "H" At hold: "L"]
19	BIT20R	O	Output signal of 20 bits (Rch).
20	BIT19R	O	Output signal of 19 bits (Rch).
21	BIT18R	O	Output signal of 18 bits (Rch).
22	BIT17R	O	Output signal of 17 bits (Rch).
23	NC	—	Not connected.
24	VSS	I	GND terminal.
25	VDD	I	Power supply (connected to +5V)
26	BCOAR	O	Bit clock of DOAR data signal.
27	WCOAR	O	Word clock of DOAR data signal.
28	DOAR	O	Input data signal to (+) DAC (Rch).
29	VDD	I	Power supply (connected to +5V).
30	BCOBR	O	Bit clock of DOBR data signal.
31	WCOBR	O	Word clock of DOBR data signal.
32	DOBR	O	Input data signal to (−) DAC (Rch).
33	NNS	I	Input signal to set NS of serial data (MDT). [NS ON: "L" NS OFF: "H"]
34	LRPL	I	Use to set the LRPL of the mode setting serial data (MDT) for digital filter. [Set to "L" to start operation at the rising edge of LRCI. Set to "H" to start operation at the falling edge of LRCI.]
35	SLDG	I	Use to select silent or ordinary degritching. [Set to "H" to activate silent degritching. Set to "L" to select ordinary degritching.]
36	SIFT	I	Use to switch in the small signal mode at a play signal level of less than −42dB. [Set to "H" to switch in the S.S. mode. Set to "L" to remain out of the S.S. mode.]
37	HALF	I	Use to switch in the half-wave (non-zero cross) operation at a play signal level of less than −42dB. ["H" : Half-wave operation "L" : Full-wave operation]
38	NTEST1	I	The small signal mode is switched in with the delay time selected with these pins after the play signal level is reduced to less than −42dB. NTEST1 — NTEST2 — Delay time H — H — 186msec H — L — 93msec L — H — 93msec L — L — 2.8μsec (1 sample)
39	NTEST2		
40	NTEST3	I	Use to reset all the chip's internal D-FFs and T-FFs when the chip requires checkout (active "L").
41	PHASE	I	Use to invert the polarity of input data, DIL and DIR, to invert overall system phase ("H" to invert).
42	H16L18	I	This is the input to select the order of the output data bits. [At "H" : 16 bits DAC At "L" : 18 bits DAC]
43	H1L2BS	I	Input signal to set the data bits of the bit shift. [At "H" : 1 bit shift At "L" : 2 bit shift]
44	DOBINV	I	Use to invert the polarity of output data, DOBL and DOBR ("H" to invert).

●IC709 (SM5813): Digital filter

Pin No.	Mark	I/O Division	Function
1	DIN	I	Serial data input signal.
2	BCKI	I	Serial bit clock input signal.
3	$\overline{CKSL}$	I	Input terminal to select input frequency of XTI terminal.
4	$\overline{CKDV}$		
5	NC	I	Not used, connected to GND.
6	XTI	I	Clock input terminal. [384fs: $\overline{CKSL}$= "H" $\overline{CKDV}$="L"]
7	XTO	O	Clock output terminal.
8	VSS1	I	GND terminal.
9	CKO	O	Clock output terminal (Not used, open).
10	$\overline{SYN}$	I	Use to select either Jitter free mode or forced sync. mode ("H" for Jitter free mode: "L" for forced sync. mode).
11	NC (MS2MS3)	I	Mode select control signal.
12			
13	NC (MDT)	I	Mode select data signal.
14	$\overline{RST}$	I	Reset signal input (reset at "L").
15	$\overline{COB}$	I	Use to select either two's complement or COB ("H" for two's complement: "L" for COB).
16	$\overline{OW20}$	I	Input terminal to select output bits data. Output bit — 16 — 18 — 20 $\overline{OW18}$ — H — L — H $\overline{OW20}$ — H — H — L
17	$\overline{OW18}$		
18	NC	—	Not used, connected to GND.
19	NC	—	Not used, open.
20	DG	O	Deglitch control clock signal.
21	VSS2	I	GND terminal.
22	VDD	I	Power supply (connected to +5V).
23	DOR	O	8fs output data signal (Rch).
24	DOL	O	8fs output data signal (Lch).
25	WCKO	O	Word clock of output data signal.
26	BCKO	O	Bit clock of output data signal.
27	FSCO	O	Internal operation timing clock with a period of fs (Not used, open).
28	LRCI	I	Sample rate (fs) clock of input data ("H" : Lch, "L" : Rch)

■ RESISTORS AND CAPACITORS

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Remarks columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Numbering System For Resistors

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470Ω)

Numbering System For Capacitors

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001μF)	Tolerance	Unique

ECEA	50	M	330
Type	Voltage (50V)	Characteristics	Value (33μF)

- ● Capacity values are in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
- ● Resistance values are in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type	Wattage		Tolerance
ERD : Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG : Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ : Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX : Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L : Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K : Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC : Solid	6G : 1/10W	8G : 1/8W	
ERF : Incombustible Box-Shaped			
ERM : Wire-Wound			
RRJ : Chip Resistor			
ERJ : Chip Resistor			

Capacitor Type	Voltage		Tolerance
ECE : Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD : Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD : Ceramic Capacitor	1H : 50V	1V : 35V	Z : $^{+80}_{-20}$ %
ECQM : Polyester	50 : 50V	05 : 50V	
ECQP : Polypropylene	2H : 500V	2A : 100V	J : ±5%
ECG : Ceramic	1 : 100V	1J : 63V	G : ±2%
ECEA N : Non Polar Electrolytic	KC : 400V AC		F : ±1%
QCU : Ceramic (Chip Type)	KC : 125V AC		C : ±0.25pF
ECUX : Ceramic (Chip Type)	(UL)		D : ±0.5pF
ECF : Semiconductor			
EECW : Liquid electrolyte double layer capacitor			

Ref. No.	Part No.	Part Name & Description	Remarks
		RESISTORS	
R101	ERDAS3G224T	C.RESISTOR 1/4W 220K	
R102	ERDAS3G224T	C.RESISTOR 1/4W 220K	
R103	ERDAS3G182T	C.RESISTOR 1/4W 1.8K	
R104	ERDAS3G182T	C.RESISTOR 1/4W 1.8K	
R105	ERDAS3G122T	C.RESISTOR 1/4W 1.2K	
R106	ERDAS3G122T	C.RESISTOR 1/4W 1.2K	
R107	ERDAS3G333T	C.RESISTOR 1/4W 33K	
R108	ERDAS3G333T	C.RESISTOR 1/4W 33K	
R109	ERDS2TJ823T	C.RESISTOR 1/4W 82K	
R110	ERDS2TJ823T	C.RESISTOR 1/4W 82K	
R113	ERDS2TJ151T	C.RESISTOR 1/4W 150	
R114	ERDS2TJ151T	C.RESISTOR 1/4W 150	
R115	ERDS2TJ221T	C.RESISTOR 1/4W 220	
R116	ERDS2TJ221T	C.RESISTOR 1/4W 220	
R117	ERDS2TJ221T	C.RESISTOR 1/4W 220	
R118	ERDS2TJ221T	C.RESISTOR 1/4W 220	
R119	ERDS2TJ101T	C.RESISTOR 1/4W 100	
R120	ERDS2TJ101T	C.RESISTOR 1/4W 100	
R121	ERDS2TJ152T	C.RESISTOR 1/4W 1.5K	
R122	ERDS2TJ152T	C.RESISTOR 1/4W 1.5K	
R123	ERDS2TJ124T	C.RESISTOR 1/4W 120K	
R124	ERDS2TJ124T	C.RESISTOR 1/4W 120K	
R125	ERD25FVJ121T	C.RESISTOR 1/4W 120	⚠
R126	ERD25FVJ121T	C.RESISTOR 1/4W 120	⚠
R127	ERD25FVJ121T	C.RESISTOR 1/4W 120	⚠
R128	ERD25FVJ121T	C.RESISTOR 1/4W 120	⚠
R129	ERDS2TJ330T	C.RESISTOR 1/4W 33	
R130	ERDS2TJ330T	C.RESISTOR 1/4W 33	
R131	ERD25FVJ150T	C.RESISTOR 1/4W 15	⚠
R132	ERD25FVJ150T	C.RESISTOR 1/4W 15	⚠
R133	ERD25FVJ150T	C.RESISTOR 1/4W 15	⚠
R134	ERD25FVJ150T	C.RESISTOR 1/4W 15	⚠
R201	ERDAS3G121T	C.RESISTOR 1/4W 120	
R202	ERDAS3G121T	C.RESISTOR 1/4W 120	
R203	ERDAS3G224T	C.RESISTOR 1/4W 220K	
R204	ERDAS3G224T	C.RESISTOR 1/4W 220K	
R205	ERDAS3G103T	C.RESISTOR 1/4W 10K	
R206	ERDAS3G103T	C.RESISTOR 1/4W 10K	
R207	ERDAS3G103T	C.RESISTOR 1/4W 10K	
R208	ERDAS3G103T	C.RESISTOR 1/4W 10K	
R209	ERDAS3G102T	C.RESISTOR 1/4W 1K	
R210	ERDAS3G102T	C.RESISTOR 1/4W 1K	
R211	ERDAS3G102T	C.RESISTOR 1/4W 1K	
R212	ERDAS3G102T	C.RESISTOR 1/4W 1K	
R213	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R214	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R215	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R216	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R217	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R218	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R219	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R220	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R221	ERD25FVJ561T	C.RESISTOR 1/4W 560	⚠
R222	ERD25FVJ561T	C.RESISTOR 1/4W 560	⚠
R223	ERD25FVJ561T	C.RESISTOR 1/4W 560	⚠
R224	ERD25FVJ561T	C.RESISTOR 1/4W 560	⚠
R225	ERDS2TJ104T	C.RESISTOR 1/4W 100K	⚠
R226	ERDS2TJ104T	C.RESISTOR 1/4W 100K	⚠
R251	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R252	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R253	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R254	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R259	ERDS2TJ332T	C.RESISTOR 1/4W 3.3K	
R260	ERDS2TJ332T	C.RESISTOR 1/4W 3.3K	
R261	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R262	ERD25FVJ222T	C.RESISTOR 1/4W 2.2K	⚠
R263	ERDS2TJ102T	C.RESISTOR 1/4W 1K	
R264	ERDS2TJ102T	C.RESISTOR 1/4W 1K	
R265	ERDS2TJ393T	C.RESISTOR 1/4W 39K	
R266	ERDS2TJ393T	C.RESISTOR 1/4W 39K	
R267	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R268	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R269	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R270	ERD25FVJ101T	C.RESISTOR 1/4W 100	⚠
R271	ERDS2TJ223T	C.RESISTOR 1/4W 22K	⚠
R272	ERDS2TJ223T	C.RESISTOR 1/4W 22K	⚠
R273	ERDS2TJ223T	C.RESISTOR 1/4W 22K	⚠
R274	ERDS2TJ223T	C.RESISTOR 1/4W 22K	⚠
R275	ERD25FVJ561T	C.RESISTOR 1/4W 560	⚠
R276	ERD25FVJ561T	C.RESISTOR 1/4W 560	⚠
R277	ERD25FVJ2R2T	C.RESISTOR 1/4W 2.2	⚠
R278	ERD25FVJ2R2T	C.RESISTOR 1/4W 2.2	⚠
R279	ERD25FVJ2R2T	C.RESISTOR 1/4W 2.2	⚠
R280	ERD25FVJ2R2T	C.RESISTOR 1/4W 2.2	⚠
R281	ERD25FVJ1R0T	C.RESISTOR 1/4W 1.0	
R282	ERD25FVJ1R0T	C.RESISTOR 1/4W 1.0	
R301	ERDAS3G121T	C.RESISTOR 1/4W 120	
R302	ERDAS3G121T	C.RESISTOR 1/4W 120	
R303	ERDAS3G121T	C.RESISTOR 1/4W 120	
R304	ERDAS3G121T	C.RESISTOR 1/4W 120	
R307	ERD25FVJ332T	C.RESISTOR 1/4W 3.3K	⚠
R308	ERD25FVJ332T	C.RESISTOR 1/4W 3.3K	⚠
R309	ERD25FVJ332T	C.RESISTOR 1/4W 3.3K	⚠
R310	ERD25FVJ332T	C.RESISTOR 1/4W 3.3K	⚠
R311	ERDS2TJ332T	C.RESISTOR 1/4W 3.3K	
R312	ERDS2TJ332T	C.RESISTOR 1/4W 3.3K	
R313	ERDS2TJ102T	C.RESISTOR 1/4W 1K	
R314	ERDS2TJ102T	C.RESISTOR 1/4W 1K	
R315	ERDS2TJ103T	C.RESISTOR 1/4W 10K	
R316	ERDS2TJ103T	C.RESISTOR 1/4W 10K	
R317	ERD25FVJ681T	C.RESISTOR 1/4W 680	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
R318	ERD25FVJ681T	C. RESISTOR 1/4W 680	⚠
R319	ERD25FVJ681T	C. RESISTOR 1/4W 680	⚠
R320	ERD25FVJ681T	C. RESISTOR 1/4W 680	⚠
R321	ERD25FVJ331T	C. RESISTOR 1/4W 330	⚠
R322	ERD25FVJ331T	C. RESISTOR 1/4W 330	⚠
R323	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	⚠
R324	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	⚠
R325	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	⚠
R326	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	⚠
R339	ERDAS3G681T	C. RESISTOR 1/4W 680	
R340	ERDAS3G681T	C. RESISTOR 1/4W 680	
R341	ERDAS3G681T	C. RESISTOR 1/4W 680	
R342	ERDAS3G681T	C. RESISTOR 1/4W 680	
R343	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R344	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R349	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R350	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R351	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R352	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R353	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R354	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R355	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R356	ERDS1FVJ100T	C. RESISTOR 1/2W 10	⚠
R357	ERD25FVJ101T	C. RESISTOR 1/4W 100	⚠
R358	ERD25FVJ101T	C. RESISTOR 1/4W 100	⚠
R359	ERG2SJ331H	M. RESISTOR 2W 330	⚠
R360	ERG2SJ331H	M. RESISTOR 2W 330	⚠
R361	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	
R362	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	
R363	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	
R364	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	
R365	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R366	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R367	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R368	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R369	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R370	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R371	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R372	RRECMKR22SC	RESISTOR 5W 0.22	⚠
R401	ERDS2TJ153T	C. RESISTOR 1/4W 15K	
R402	ERDS2TJ153T	C. RESISTOR 1/4W 15K	
R403	ERD25FVJ271T	C. RESISTOR 1/4W 270	⚠
R404	ERD25FVJ271T	C. RESISTOR 1/4W 270	⚠
R405	ERD25FVJ472T	C. RESISTOR 1/4W 4.7K	⚠
R406	ERD25FVJ472T	C. RESISTOR 1/4W 4.7K	⚠
R407	ERDS2TJ473T	C. RESISTOR 1/4W 47K	
R408	ERDS2TJ563T	C. RESISTOR 1/4W 56K	
R409	ERDS2TJ153T	C. RESISTOR 1/4W 15K	
R411	ERDS2TJ153T	C. RESISTOR 1/4W 15K	
R413	ERDS1FVJ821T	C. RESISTOR 1/2W 820	
R414	ERG2SJ681H	M. RESISTOR 2W 680	⚠
R415	ERG2SJ681H	M. RESISTOR 2W 680	⚠
R416	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R424	ERDS1FVJ682T	C. RESISTOR 1/2W 6.8K	⚠
R425	ERDS2TJ563T	C. RESISTOR 1/4W 56K	⚠
R426	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R430	ERD25FJ121P	C. RESISTOR 1/4W 120	
R451	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R452	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K	
R453	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K	
R454	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R455	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R456	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R501	ERD25FVJ6R8T	C. RESISTOR 1/4W 6.8	⚠
R502	ERD25FVJ6R8T	C. RESISTOR 1/4W 6.8	⚠
R503	ERD25FVJ6R8T	C. RESISTOR 1/4W 6.8	⚠
R504	ERD25FVJ6R8T	C. RESISTOR 1/4W 6.8	⚠
R605	ERDAS3G182T	C. RESISTOR 1/4W 1.8K	
R606	ERDAS3G182T	C. RESISTOR 1/4W 1.8K	
R607	ERDAS3G332T	C. RESISTOR 1/4W 3.3K	
R608	ERDAS3G332T	C. RESISTOR 1/4W 3.3K	
R609	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R610	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R611	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R612	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R613	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R614	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R615	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R616	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R617	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R618	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R619	ERDS2TJ220T	C. RESISTOR 1/4W 22	
R620	ERDS2TJ220T	C. RESISTOR 1/4W 22	
R621	ERDS2TJ152T	C. RESISTOR 1/4W 1.5K	
R622	ERDS2TJ152T	C. RESISTOR 1/4W 1.5K	
R623	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R624	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R625	ERD25FVJ121T	C. RESISTOR 1/4W 120	⚠
R626	ERD25FVJ121T	C. RESISTOR 1/4W 120	⚠
R627	ERD25FVJ121T	C. RESISTOR 1/4W 120	⚠
R628	ERD25FVJ121T	C. RESISTOR 1/4W 120	⚠
R629	ERDS2TJ330T	C. RESISTOR 1/4W 33	
R630	ERDS2TJ330T	C. RESISTOR 1/4W 33	
R631	ERD25FVJ150T	C. RESISTOR 1/4W 15	⚠
R632	ERD25FVJ150T	C. RESISTOR 1/4W 15	⚠
R633	ERD25FVJ150T	C. RESISTOR 1/4W 15	⚠
R634	ERD25FVJ150T	C. RESISTOR 1/4W 15	⚠
R635	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R636	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R701	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R702	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R703	ERDS2TJ750T	C. RESISTOR 1/4W 75	
R704	ERDS2TJ750T	C. RESISTOR 1/4W 75	
R705	ERDS2TJ750T	C. RESISTOR 1/4W 75	

Ref. No.	Part No.	Part Name & Description	Remarks
R706	ERDS2TJ393T	C. RESISTOR 1/4W 39K	
R707	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R708	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R709	ERDS2TJ393T	C. RESISTOR 1/4W 39K	
R710	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R711	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R712	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R713	ERDS2TJ394T	C. RESISTOR 1/4W 390K	
R714	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R715	ERDS2TJ224T	C. RESISTOR 1/4W 220K	
R717	ERDS2TJ332T	C. RESISTOR 1/4W 3. 3K	
R718	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R719	ERDS2TJ123T	C. RESISTOR 1/4W 12K	
R720	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R721	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R722	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R723	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R724	ERDS2TJ824T	C. RESISTOR 1/4W 820K	
R725	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R726	ERDS2TJ151T	C. RESISTOR 1/4W 150	
R727	ERDS2TJ104T	C. RESISTOR 1/4W 100K	
R728	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R731	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R732	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R733	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R734	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R735	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R741	ERDS2TJ105T	C. RESISTOR 1/4W 1M	
R742	ERDS2TJ105T	C. RESISTOR 1/4W 1M	
R743	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R744	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R745	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R751	ERDS1FVJ331T	C. RESISTOR 1/2W 330	⚠
R752	ERDS1FVJ331T	C. RESISTOR 1/2W 330	⚠
R753	ERDS2TJ152T	C. RESISTOR 1/4W 1. 5K	
R754	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R756	ERDS1FVJ561T	C. RESISTOR 1/2W 560	⚠
R757	ERDS2TJ471T	C. RESISTOR 1/4W 470	
R758	ERDS2TJ683T	C. RESISTOR 1/4W 68K	
R759	ERDS2TJ683T	C. RESISTOR 1/4W 68K	
R760	ERDS2TJ683T	C. RESISTOR 1/4W 68K	
R761	ERDS2TJ683T	C. RESISTOR 1/4W 68K	
R762	ERDS2TJ683T	C. RESISTOR 1/4W 68K	
R763	ERDS1FVJ221T	C. RESISTOR 1/2W 220	⚠
R764	ERDS2TJ151T	C. RESISTOR 1/4W 150	
R765	ERDS1FVJ821T	C. RESISTOR 1/2W 820	⚠
R801	ERDS2TJ333T	C. RESISTOR 1/4W 33K	
R802	ERDS2TJ333T	C. RESISTOR 1/4W 33K	
R803	ERDS2TJ683T	C. RESISTOR 1/4W 68K	
R804	ERDS2TJ683T	C. RESISTOR 1/4W 68K	
R805	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R806	ERDS2TJ124T	C. RESISTOR 1/4W 120K	

Ref. No.	Part No.	Part Name & Description	Remarks
R807	ERDS2TJ274T	C. RESISTOR 1/4W 270K	
R808	ERDS2TJ274T	C. RESISTOR 1/4W 270K	
R809	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R810	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R811	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R812	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R813	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R814	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R815	ERDS2TJ105T	C. RESISTOR 1/4W 1M	
R816	ERDS2TJ105T	C. RESISTOR 1/4W 1M	
R817	ERDAS3G272T	C. RESISTOR 1/4W 2. 7K	
R818	ERDAS3G272T	C. RESISTOR 1/4W 2. 7K	
R819	ERDAS3G272T	C. RESISTOR 1/4W 2. 7K	
R820	ERDAS3G272T	C. RESISTOR 1/4W 2. 7K	
R825	ERDS2TJ334T	C. RESISTOR 1/4W 330K	
R826	ERDS2TJ334T	C. RESISTOR 1/4W 330K	
R827	ERDS2TJ684T	C. RESISTOR 1/4W 680K	
R828	ERDS2TJ684T	C. RESISTOR 1/4W 680K	
R837	ERDAS3G330T	C. RESISTOR 1/4W 33	
R838	ERDAS3G330T	C. RESISTOR 1/4W 33	
R839	ERDAS3G332T	C. RESISTOR 1/4W 3. 3K	
R840	ERDAS3G332T	C. RESISTOR 1/4W 3. 3K	
R841	ERDAS3G100T	C. RESISTOR 1/4W 10	
R842	ERDAS3G100T	C. RESISTOR 1/4W 10	
R843	ERDAS3G102T	C. RESISTOR 1/4W 1K	
R844	ERDAS3G102T	C. RESISTOR 1/4W 1K	
R845	ERDAS3G330T	C. RESISTOR 1/4W 33	
R846	ERDAS3G330T	C. RESISTOR 1/4W 33	
R847	ERDAS3G332T	C. RESISTOR 1/4W 3. 3K	
R848	ERDAS3G332T	C. RESISTOR 1/4W 3. 3K	
R849	ERDAS3G100T	C. RESISTOR 1/4W 10	
R850	ERDAS3G100T	C. RESISTOR 1/4W 10	
R851	ERDAS3G102T	C. RESISTOR 1/4W 1K	
R852	ERDAS3G102T	C. RESISTOR 1/4W 1K	
R853	ERDAS3G222T	C. RESISTOR 1/4W 2. 2K	
R854	ERDAS3G222T	C. RESISTOR 1/4W 2. 2K	
R855	ERDAS3G222T	C. RESISTOR 1/4W 2. 2K	
R856	ERDAS3G222T	C. RESISTOR 1/4W 2. 2K	
R857	ERDAS3G682T	C. RESISTOR 1/4W 6. 8K	
R858	ERDAS3G682T	C. RESISTOR 1/4W 6. 8K	
R859	ERDAS3G472T	C. RESISTOR 1/4W 4. 7K	
R860	ERDAS3G472T	C. RESISTOR 1/4W 4. 7K	
R861	ERDAS3G332T	C. RESISTOR 1/4W 3. 3K	
R862	ERDAS3G332T	C. RESISTOR 1/4W 3. 3K	
R865	ERDAS3G392T	C. RESISTOR 1/4W 3. 9K	
R866	ERDAS3G392T	C. RESISTOR 1/4W 3. 9K	
R867	ERDAS3G823T	C. RESISTOR 1/4W 82K	
R868	ERDAS3G823T	C. RESISTOR 1/4W 82K	
R869	ERDAS3G103T	C. RESISTOR 1/4W 10K	
R870	ERDAS3G103T	C. RESISTOR 1/4W 10K	
R871	ERDAS3G392T	C. RESISTOR 1/4W 3. 9K	
R872	ERDAS3G392T	C. RESISTOR 1/4W 3. 9K	

Ref. No.	Part No.	Part Name & Description	Remarks
R873	ERDS2TJ105T	C. RESISTOR 1/4W 1M	
R874	ERDS2TJ105T	C. RESISTOR 1/4W 1M	
R883	ERDAS3G561T	C. RESISTOR 1/4W 560	
R884	ERDAS3G561T	C. RESISTOR 1/4W 560	
R885	ERDAS3G104T	C. RESISTOR 1/4W 100K	
R886	ERDAS3G104T	C. RESISTOR 1/4W 100K	
R889	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R890	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R891	ERDS2TJ224T	C. RESISTOR 1/4W 220K	
R892	ERDS2TJ272T	C. RESISTOR 1/4W 2.7K	
R901	ERG2ANJP120S	M. RESISTOR 2W 12	⚠
R902	ERDS1FVJ470T	C. RESISTOR 1/2W 47	⚠
R903	ERDAS3G680T	C. RESISTOR 1/4W 68	
R904	ERDAS3G330T	C. RESISTOR 1/4W 33	
R905	ERDAS3G333T	C. RESISTOR 1/4W 33K	
R906	ERDAS3G333T	C. RESISTOR 1/4W 33K	
R907	ERDAS3G332T	C. RESISTOR 1/4W 3.3K	
R908	ERDAS3G332T	C. RESISTOR 1/4W 3.3K	
R951	ERDS1FVJ6R8T	C. RESISTOR 1/2W 6.8	⚠
R952	ERDS1FVJ6R8T	C. RESISTOR 1/2W 6.8	⚠
R953	ERD25FVJ121T	C. RESISTOR 1/4W 120	⚠
		CAPACITORS	
C1	ECKWNS103ZVS	C. CAPACITOR 250V 0.01U	⚠
C101	ECBT1H221KB	C. CAPACITOR 50V 220P	
C102	ECBT1H221KB	C. CAPACITOR 50V 220P	
C103	ECEA0JPX221B	E. CAPACITOR 6.3V 220U	
C104	ECEA0JPX221B	E. CAPACITOR 6.3V 220U	
C105	ECCT1H040C	C. CAPACITOR 50V 4P	
C106	ECCT1H040C	C. CAPACITOR 50V 4P	
C107	ECBT1H821KB5	C. CAPACITOR 50V 820P	
C108	ECBT1H821KB5	C. CAPACITOR 50V 820P	
C109	ECCT2H680K	C. CAPACITOR 500V 68P	
C110	ECCT2H680K	C. CAPACITOR 500V 68P	
C111	ECCT2H680K	C. CAPACITOR 500V 68P	
C112	ECCT2H680K	C. CAPACITOR 500V 68P	
C115	RCBS1H181KBY	C. CAPACITOR 50V 180P	
C116	RCBS1H181KBY	C. CAPACITOR 50V 180P	
C117	RCBS1H181KBY	C. CAPACITOR 50V 180P	
C118	RCBS1H181KBY	C. CAPACITOR 50V 180P	
C201	RCBS1H221KBY	C. CAPACITOR 50V 220P	
C202	RCBS1H221KBY	C. CAPACITOR 50V 220P	
C203	ECEA1EBZ220B	E. CAPACITOR 25V 22U	
C204	ECEA1EBZ220B	E. CAPACITOR 25V 22U	
C205	ECEA1EBZ220B	E. CAPACITOR 25V 22U	
C206	ECEA1EBZ220B	E. CAPACITOR 25V 22U	
C207	ECEA1AK330B	E. CAPACITOR 10V 33U	
C208	ECEA1AK330B	E. CAPACITOR 10V 33U	
C209	ECEA1AK330B	E. CAPACITOR 10V 33U	
C210	ECEA1AK330B	E. CAPACITOR 10V 33U	
C211	ECEA1CK100B	E. CAPACITOR 16V 10U	
C212	ECEA1CK100B	E. CAPACITOR 16V 10U	
C213	ECEA1CK100B	E. CAPACITOR 16V 10U	
C214	ECEA1CK100B	E. CAPACITOR 16V 10U	
C255	ECEA1HK010B	E. CAPACITOR 50V 1U	
C256	ECEA1HK010B	E. CAPACITOR 50V 1U	
C257	ECEA1HK010B	E. CAPACITOR 50V 1U	
C258	ECEA1HK010B	E. CAPACITOR 50V 1U	
C259	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C260	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C261	RCBS1H221KBY	C. CAPACITOR 50V 220P	
C262	RCBS1H221KBY	C. CAPACITOR 50V 220P	
C301	ECEA0JPX101B	E. CAPACITOR 6.3V 100U	
C302	ECEA0JPX101B	E. CAPACITOR 6.3V 100U	
C303	ECEA0JPX101B	E. CAPACITOR 6.3V 100U	
C304	ECEA0JPX101B	E. CAPACITOR 6.3V 100U	
C305	ECQB1H822JZ3	P. CAPACITOR 50V 8200P	
C306	ECQB1H822JZ3	P. CAPACITOR 50V 8200P	
C307	ECBT1H681KB5	C. CAPACITOR 50V 680P	
C308	ECBT1H681KB5	C. CAPACITOR 50V 680P	
C309	ECBT1H681KB5	C. CAPACITOR 50V 680P	
C310	ECBT1H681KB5	C. CAPACITOR 50V 680P	
C311	ECBT1H561KB5	C. CAPACITOR 50V 560P	
C312	ECBT1H561KB5	C. CAPACITOR 50V 560P	
C313	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C314	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C315	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C316	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C317	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C318	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C319	ECKT1H102KB	C. CAPACITOR 50V 0.001U	
C320	ECKT1H102KB	C. CAPACITOR 50V 0.001U	
C321	ECKT1H681KB	C. CAPACITOR 50V 680P	
C322	ECKT1H681KB	C. CAPACITOR 50V 680P	
C323	ECKT1H681KB	C. CAPACITOR 50V 680P	
C324	ECKT1H681KB	C. CAPACITOR 50V 680P	
C325	ECQM1H103KV3	P. CAPACITOR 50V 0.01U	
C326	ECQM1H103KV3	P. CAPACITOR 50V 0.01U	
C327	ECQM1H103KV3	P. CAPACITOR 50V 0.01U	
C328	ECQM1H103KV3	P. CAPACITOR 50V 0.01U	
C329	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C330	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C331	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C332	ECQM1H683KV3	P. CAPACITOR 50V 0.068U	
C401	ECEA0JU331B	E. CAPACITOR 6.3V 330U	
C402	ECEA0JK470B	E. CAPACITOR 6.3V 47U	
C403	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C404	ECFTD223KXL	S. CAPACITOR 25V 0.022U	
C405	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C451	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C501	ECET71V103MY	E. CAPACITOR 71V 0.01U	⚠
C502	ECET71V103MY	E. CAPACITOR 71V 0.01U	⚠
C503	ECET71V103MY	E. CAPACITOR 71V 0.01U	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
C504	ECET71V103MY	E. CAPACITOR 71V 0.01U	⚠
C505	ECEA1DPX472E	E. CAPACITOR 25V 4700U	
C506	ECEA1DPX472E	E. CAPACITOR 25V 4700U	
C507	ECQE2104KS	P. CAPACITOR 250V 0.1U	⚠
C508	ECQE2104KS	P. CAPACITOR 250V 0.1U	
C509	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C510	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C511	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C512	ECEA1HK010B	E. CAPACITOR 50V 1U	
C513	ECEA2APX010B	E. CAPACITOR 100V 1U	⚠
C514	ECEA2APX010B	E. CAPACITOR 100V 1U	⚠
C515	ECEA2APX010B	E. CAPACITOR 100V 1U	⚠
C516	ECEA2APX010B	E. CAPACITOR 100V 1U	⚠
C551	ECEA2APX010B	E. CAPACITOR 100V 1U	
C552	ECEA2APX010B	E. CAPACITOR 100V 1U	
C553	ECEA2APX010B	E. CAPACITOR 100V 1U	
C554	ECEA2APX010B	E. CAPACITOR 100V 1U	
C555	ECKT1H223ZF	C. CAPACITOR 50V 0.022U	
C556	ECKT1H223ZF	C. CAPACITOR 50V 0.022U	
C557	ECKT1H223ZF	C. CAPACITOR 50V 0.022U	
C558	ECKT1H223ZF	C. CAPACITOR 50V 0.022U	
C605	ECCT1H330K	C. CAPACITOR 50V 33P	
C606	ECCT1H330K	C. CAPACITOR 50V 33P	
C607	ECQM1H682KV3	P. CAPACITOR 50V 6800P	
C608	ECQM1H682KV3	P. CAPACITOR 50V 6800P	
C609	ECCT2H221K	C. CAPACITOR 500V 220P	
C610	ECCT2H221K	C. CAPACITOR 500V 220P	
C611	ECCT2H221K	C. CAPACITOR 500V 220P	
C612	ECCT2H221K	C. CAPACITOR 500V 220P	
C701	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	
C702	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	
C703	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C704	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C705	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C706	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C707	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C708	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C710	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C711	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C712	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C713	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C714	ECEA1EN4R7SB	E. CAPACITOR 25V 4.7U	
C715	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C716	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C717	ECEA1HK010B	E. CAPACITOR 50V 1U	
C718	RCBS1H4R7KLY	C. CAPACITOR 50V 4.7P	
C719	RCBS1H4R7KLY	C. CAPACITOR 50V 4.7P	
C720	ECFTD103KXL	S. CAPACITOR 25V 0.01U	
C721	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	
C722	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C723	RCBS1H6R8KLY	C. CAPACITOR 50V 6.8P	
C725	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	

Ref. No.	Part No.	Part Name & Description	Remarks
C726	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C727	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C728	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C729	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C731	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C732	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	
C733	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C734	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C735	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	
C736	ECKD1H103ZF	C. CAPACITOR 50V 0.01U	
C751	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C801	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C802	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C803	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C804	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C805	RCBS1H101KBY	C. CAPACITOR 50V 100P	
C806	RCBS1H101KBY	C. CAPACITOR 50V 100P	
C813	ECEA1CPX100B	E. CAPACITOR 16V 10U	
C814	ECEA1CPX100B	E. CAPACITOR 16V 10U	
C815	ECEA1CPX100B	E. CAPACITOR 16V 10U	
C816	ECEA1CPX100B	E. CAPACITOR 16V 10U	
C817	ECQP2A271JSP	P. CAPACITOR 500V 270P	
C818	ECQP2A271JSP	P. CAPACITOR 500V 270P	
C819	ECQP2A271JSP	P. CAPACITOR 500V 270P	
C820	ECQP2A271JSP	P. CAPACITOR 500V 270P	
C823	ECQP1392JZ3	P. CAPACITOR 100V 0.0039	
C824	ECQP1392JZ3	P. CAPACITOR 100V 0.0039	
C825	ECEA1CBZ101B	E. CAPACITOR 16V 100U	
C826	ECEA1CBZ101B	E. CAPACITOR 16V 100U	
C827	ECBT1H471KB5	C. CAPACITOR 50V 470P	
C828	ECBT1H471KB5	C. CAPACITOR 50V 470P	
C829	ECQP1472JZ3	C. CAPACITOR 100V 0.0047	
C830	ECQP1472JZ3	C. CAPACITOR 100V 0.0047	
C831	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C832	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	
C833	ECEA1CBZ101B	E. CAPACITOR 16V 100U	
C834	ECEA1CBZ101B	E. CAPACITOR 16V 100U	
C835	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C901	ECEA1EPX332E	E. CAPACITOR 25V 3300U	
C902	ECEA1EPX332E	E. CAPACITOR 25V 3300U	
C903	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C904	ECFR1E104ZF5	S. CAPACITOR 25V 0.1U	
C905	ECEA1CPX100B	E. CAPACITOR 16V 10U	
C906	ECEA1CPX100B	E. CAPACITOR 16V 10U	
C907	ECEA1APX101B	E. CAPACITOR 10V 100U	
C908	ECEA1APX101B	E. CAPACITOR 10V 100U	
C909	ECEA1APX331B	E. CAPACITOR 10V 330U	
C910	ECEA1APX101B	E. CAPACITOR 10V 100U	
C911	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	
C912	ECEA0JPU101B	E. CAPACITOR 6.3V 100U	

■ REPLACEMENT PARTS LIST

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Remarks columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC201	M5218P	IC, VOLTAGE/CURRENT MIRROR	
IC202	M5218P	IC, VOLTAGE/CURRENT MIRROR	
IC401	AN7073	IC, PROTECTION	
IC701	TORX174-A	IC, OPTICAL RECEIVER	
IC702	TORX174-A	IC, OPTICAL RECEIVER	
IC703	MN74HCU04	IC, INVERTER	
IC704	MN74HC00	IC, INPUT SELECTOR	
IC705	MN74HC00	IC, INPUT SELECTOR	
IC706	MN74HC00	IC, INPUT SELECTOR	
IC707	MN123Z	IC, INPUT MUTING	
IC708	YM3623B	IC, D SIGNAL PROCESSING	
IC709	SM5813	IC, DIGITAL FILTER	
IC710	MN53015PEU	IC, 4DAC GATE ARRAY	
IC751	TC74HC42P	IC, LED DRIVE	
IC801	PCM56P	IC, D/A CONVERTER	
IC802	PCM56P	IC, D/A CONVERTER	
IC803	PCM56P	IC, D/A CONVERTER	
IC804	PCM56P	IC, D/A CONVERTER	
IC805	M5238P	IC, CLASS AA BUFFER	
IC806	M5238P	IC, CLASS AA BUFFER	
IC807	M5238P	IC, CLASS AA BUFFER	
IC808	M5238P	IC, CLASS AA BUFFER	
IC809	NJM4580D	IC, L. P. FILTER AMP	
IC810	NJM4580D	IC, L. P. FILTER AMP	
IC813	SVIUPD4053BC	IC, DEGLITCH	
IC814	SVIUPD4053BC	IC, DEGLITCH	
IC815	UPC4570C	IC, BUFFER AMP	
IC901	M5F78M08L	IC, EXTEND ACTIVE SERVO	
IC902	M5F79M08L	IC, EXTEND ACTIVE SERVO	
IC903	AN78M05	IC, REGULATOR	
IC904	AN79N05	IC, REGULATOR	
IC905	UPC4570C	IC, EXTEND ACTIVE SERVO	
		TRANSISTORS	
Q101	2SK389BG	TRANSISTOR	
Q102	2SK389BG	TRANSISTOR	
Q103	2SD1512RSTTA	TRANSISTOR	
Q104	2SD1512RSTTA	TRANSISTOR	
Q105	2SD1512RSTTA	TRANSISTOR	
Q106	2SD1512RSTTA	TRANSISTOR	
Q107	2SA1309AQSTA	TRANSISTOR	
Q108	2SA1309AQSTA	TRANSISTOR	
Q109	2SA1309AQSTA	TRANSISTOR	
Q110	2SA1309AQSTA	TRANSISTOR	
Q111	2SC1845EF	TRANSISTOR	
Q112	2SC1845EF	TRANSISTOR	
Q113	2SB1036RSTTA	TRANSISTOR	
Q114	2SB1036RSTTA	TRANSISTOR	
Q115	2SA1123RST	TRANSISTOR	
Q116	2SA1123RST	TRANSISTOR	
Q117	2SC2631RST	TRANSISTOR	
Q118	2SC2631RST	TRANSISTOR	
Q119	2SC2631RST	TRANSISTOR	
Q120	2SC2631RST	TRANSISTOR	
Q121	2SA1123RST	TRANSISTOR	
Q122	2SA1123RST	TRANSISTOR	
Q201	2SC2631RST	TRANSISTOR	
Q202	2SC2631RST	TRANSISTOR	
Q203	2SA1123RST	TRANSISTOR	
Q204	2SA1123RST	TRANSISTOR	
Q205	2SA1123RST	TRANSISTOR	
Q206	2SA1123RST	TRANSISTOR	
Q207	2SC2631RST	TRANSISTOR	
Q208	2SC2631RST	TRANSISTOR	
Q209	2SA1123RST	TRANSISTOR	
Q210	2SA1123RST	TRANSISTOR	
Q211	2SC2631RST	TRANSISTOR	
Q212	2SC2631RST	TRANSISTOR	
Q213	2SC2631RST	TRANSISTOR	
Q214	2SC2631RST	TRANSISTOR	
Q215	2SA1123RST	TRANSISTOR	
Q216	2SA1123RST	TRANSISTOR	
Q251	2SC1815BGL	TRANSISTOR	
Q252	2SC1815BGL	TRANSISTOR	
Q253	2SC2631RST	TRANSISTOR	⚠
Q254	2SC2631RST	TRANSISTOR	⚠
Q255	2SA1123RST	TRANSISTOR	⚠
Q256	2SA1123RST	TRANSISTOR	⚠
Q257	2SC3944AQRS	TRANSISTOR	⚠
Q258	2SC3944AQRS	TRANSISTOR	⚠
Q259	2SA1535AQRS	TRANSISTOR	⚠
Q260	2SA1535AQRS	TRANSISTOR	⚠
Q261	2SC3311AQSTA	TRANSISTOR	
Q262	2SC3311AQSTA	TRANSISTOR	
Q263	2SA1309AQSTA	TRANSISTOR	
Q264	2SA1309AQSTA	TRANSISTOR	
Q301	2SC1815BGL	TRANSISTOR	
Q302	2SC1815BGL	TRANSISTOR	
Q303	2SC3944AQRS	TRANSISTOR	⚠
Q304	2SC3944AQRS	TRANSISTOR	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
Q305	2SA1535AQRS	TRANSISTOR	⚠
Q306	2SA1535AQRS	TRANSISTOR	⚠
Q307, 308	2SC3182R	TRANSISTOR	⚠
Q309, 310	2SA1265R	TRANSISTOR	⚠
Q311, 312	2SC3182R	TRANSISTOR	⚠
Q313, 314	2SA1265R	TRANSISTOR	⚠
Q401	2SB1036RSTTA	TRANSISTOR	
Q402	2SB1036RSTTA	TRANSISTOR	
Q403	2SA992EFP	TRANSISTOR	
Q451	2SC1845EF	TRANSISTOR	
Q452	2SA1309AQSTA	TRANSISTOR	
Q601	2SK389BG	TRANSISTOR	
Q602	2SK389BG	TRANSISTOR	
Q603	2SD1512RSTTA	TRANSISTOR	
Q604	2SD1512RSTTA	TRANSISTOR	
Q605	2SD1512RSTTA	TRANSISTOR	
Q606	2SD1512RSTTA	TRANSISTOR	
Q607	2SA1309AQSTA	TRANSISTOR	
Q608	2SA1309AQSTA	TRANSISTOR	
Q609	2SA1309AQSTA	TRANSISTOR	
Q610	2SA1309AQSTA	TRANSISTOR	
Q611	2SC1845EF	TRANSISTOR	
Q612	2SC1845EF	TRANSISTOR	
Q613	2SB1036RSTTA	TRANSISTOR	
Q614	2SB1036RSTTA	TRANSISTOR	
Q615	2SA1123RST	TRANSISTOR	
Q616	2SA1123RST	TRANSISTOR	
Q617	2SC2631RST	TRANSISTOR	
Q618	2SC2631RST	TRANSISTOR	
Q619	2SC2631RST	TRANSISTOR	
Q620	2SC2631RST	TRANSISTOR	
Q621	2SA1123RST	TRANSISTOR	
Q622	2SA1123RST	TRANSISTOR	
Q701	UN4111TA	TRANSISTOR	
Q702	UN4211TA	TRANSISTOR	
Q703	2SA1309AQSTA	TRANSISTOR	
Q704	UN4211TA	TRANSISTOR	
Q705	UN4215TA	TRANSISTOR	
Q706	UN4211TA	TRANSISTOR	
Q801	UN4211TA	TRANSISTOR	
Q802	UN4211TA	TRANSISTOR	
Q803	2SD1450RSTTA	TRANSISTOR	
Q804	2SD1450RSTTA	TRANSISTOR	
Q805	UN4112TA	TRANSISTOR	
		DIODES	
D101	MA165TA	DIODE	
D102	MA165TA	DIODE	
D103	MA165TA	DIODE	
D104	MA165TA	DIODE	
D105	MA165TA	DIODE	
D106	MA165TA	DIODE	
D107	MA29WATA	DIODE	
D108	MA29WATA	DIODE	
D109	MA29WATA	DIODE	
D110	MA29WATA	DIODE	
D111	MA4082MTA	DIODE	
D112	MA4082MTA	DIODE	
D201	MA165TA	DIODE	
D202	MA165TA	DIODE	
D203	MA165TA	DIODE	
D204	MA165TA	DIODE	
D205	MA29WATA	DIODE	⚠
D206	MA29WATA	DIODE	⚠
D207	MA29WATA	DIODE	⚠
D208	MA29WATA	DIODE	⚠
D209	MA4082MTA	DIODE	
D210	MA4082MTA	DIODE	
D211	MA4082MTA	DIODE	
D212	MA4082MTA	DIODE	
D251	MA165TA	DIODE	
D252	MA165TA	DIODE	
D253	MA165TA	DIODE	
D254	MA165TA	DIODE	
D401	MA165TA	DIODE	
D402	MA165TA	DIODE	
D403	MA4180MTA	DIODE	
D404	MA165TA	DIODE	
D405	MA165TA	DIODE	
D406	MA165TA	DIODE	
D407	MA167TA	DIODE	
D451	LN014472PH	L. E. D.	
D452	LN014472PH	L. E. D.	
D453	MA29WATA	DIODE	
D454	1SR35200TB	DIODE	⚠
D455	LN018314PH1	L. E. D.	
D456	MA4051MTA	DIODE	
D501	P300DLF	DIODE	⚠
D502	P300DLF	DIODE	⚠
D503	P300DLF	DIODE	⚠
D504	P300DLF	DIODE	⚠
D505	P300DLF	DIODE	⚠
D506	P300DLF	DIODE	⚠
D507	P300DLF	DIODE	⚠
D508	P300DLF	DIODE	⚠
D509	1SR35200TB	DIODE	⚠
D510	1SR35200TB	DIODE	⚠
D511	1SR35200TB	DIODE	⚠
D512	1SR35200TB	DIODE	⚠
D551	MA4036MTA	DIODE	
D552	MA4036MTA	DIODE	
D553	MA4036MTA	DIODE	
D554	MA4036MTA	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D601	MA165TA	DIODE	
D602	MA165TA	DIODE	
D603	MA165TA	DIODE	
D604	MA165TA	DIODE	
D605	MA165TA	DIODE	
D606	MA165TA	DIODE	
D607	MA29WATA	DIODE	
D608	MA29WATA	DIODE	
D609	MA29WATA	DIODE	
D610	MA29WATA	DIODE	
D611	MA29WATA	DIODE	
D612	MA29WATA	DIODE	
D613	MA165TA	DIODE	
D614	MA165TA	DIODE	
D615	MA165TA	DIODE	
D616	MA165TA	DIODE	
D701	MA165TA	DIODE	
D702	MA165TA	DIODE	
D703	MA165TA	DIODE	
D751	MA165TA	DIODE	
D752	MA165TA	DIODE	
D753	LN346GP-C	L. E. D.	
D754	LN346GP-C	L. E. D.	
D755	LN346GP-C	L. E. D.	
D756	MA4051MTA	DIODE	
D757	MA165TA	DIODE	
D759	LN018305PH	L. E. D.	
D760	LN014305PH	L. E. D.	
D761	LN014305PH	L. E. D.	
D762	LN014305PH	L. E. D.	
D763	LN014305PH	L. E. D.	
D764	MA4051MTA	DIODE	
D765	MA4051MTA	DIODE	
D766	MA4051MTA	DIODE	
D767	MA4082MTA	DIODE	
D768	MA4082MTA	DIODE	
D769	MA4082MTA	DIODE	
D801	MA165TA	DIODE	
D802	MA165TA	DIODE	
D901	1SR35200TB	DIODE	⚠
D902	1SR35200TB	DIODE	⚠
D903	MA165TA	DIODE	
D904	MA165TA	DIODE	
D951	MA165TA	DIODE	
		VARIABLE RESISTORS	
VR101	EWCL5A020775	V. R, MAIN VOLUME	
VR251	QVNB3A00B471	V. R, LCH V-AMP. ICQ. ADJ.	
VR252	QVNB3A00B471	V. R, RCH V-AMP. ICQ. ADJ.	
VR301	QVNB3A00B471	V. R, LCH I-AMP. ICQ. ADJ.	
VR302	QVNB3A00B471	V. R, RCH I-AMP. ICQ. ADJ.	

Ref. No.	Part No.	Part Name & Description	Remarks
VR701	EVN38CA00B15	V. R, LCH DAC DISTORTION ADJ.	
VR702	EVN38CA00B15	V. R, RCH DAC DISTORTION ADJ.	
VR801	EVND4AA00B15	V. R, LCH DAC MSB. ADJ.	
VR802	EVND4AA00B15	V. R, RCH DAC MSB. ADJ.	
VR803	EVND4AA00B53	V. R, LCH DAC GAIN ADJ.	
VR804	EVND4AA00B53	V. R, RCH DAC GAIN ADJ.	
VR805	EVND4AA00B53	V. R, LCH DAC GAIN ADJ.	
VR806	EVND4AA00B53	V. R, RCH DAC GAIN ADJ.	
		THERMISTORS	
TH251	ERTD2WHL104S	THERMISTOR	
TH252	ERTD2WHL104S	THERMISTOR	
TH301	ERTD2WHL104S	THERMISTOR	
TH302	ERTD2WHL104S	THERMISTOR	
		COMPONENT COMBINATIONS	
Z301	ERF3GBKR22N	COMPONENT COMBINATION	
Z302	ERF3GBKR22N	COMPONENT COMBINATION	
Z303	ERF3GBKR22N	COMPONENT COMBINATION	
Z304	ERF3GBKR22N	COMPONENT COMBINATION	
Z801	EXCEMT103DC	COMPONENT COMBINATION	
Z802	EXCEMT103DC	COMPONENT COMBINATION	
Z803	EXCEMT103DC	COMPONENT COMBINATION	
Z804	EXCEMT103DC	COMPONENT COMBINATION	
Z805	EXCEMT103DC	COMPONENT COMBINATION	
Z806	EXCEMT103DC	COMPONENT COMBINATION	
Z807	EXCEMT103DC	COMPONENT COMBINATION	
Z808	EXCEMT103DC	COMPONENT COMBINATION	
Z901	EXCEMT103DC	COMPONENT COMBINATION	
Z902	EXCEMT103DC	COMPONENT COMBINATION	
		COILS	
L101	RLQZP4R7KTY	COIL	
L102	RLQZP4R7KTY	COIL	
L103	RLQZP4R7KTY	COIL	
L104	RLQZP4R7KTY	COIL	
L301	SLQY07G-40	COIL	
L302	SLQY07G-40	COIL	
L303	SLQY18G-10	COIL	
L304	SLQY18G-10	COIL	
L305	SLQY07G-40	COIL	
L306	SLQY07G-40	COIL	
L307	SLQY07G-40	COIL	
L308	SLQY07G-40	COIL	
L309	SLQZ650MH49	COIL	⚠<E, E5>
L701	ELEPK4R7KA	COIL	
L703	ELEPK4R7KA	COIL	
L704	ELEPK4R7KA	COIL	
L705	ELEPK4R7KA	COIL	

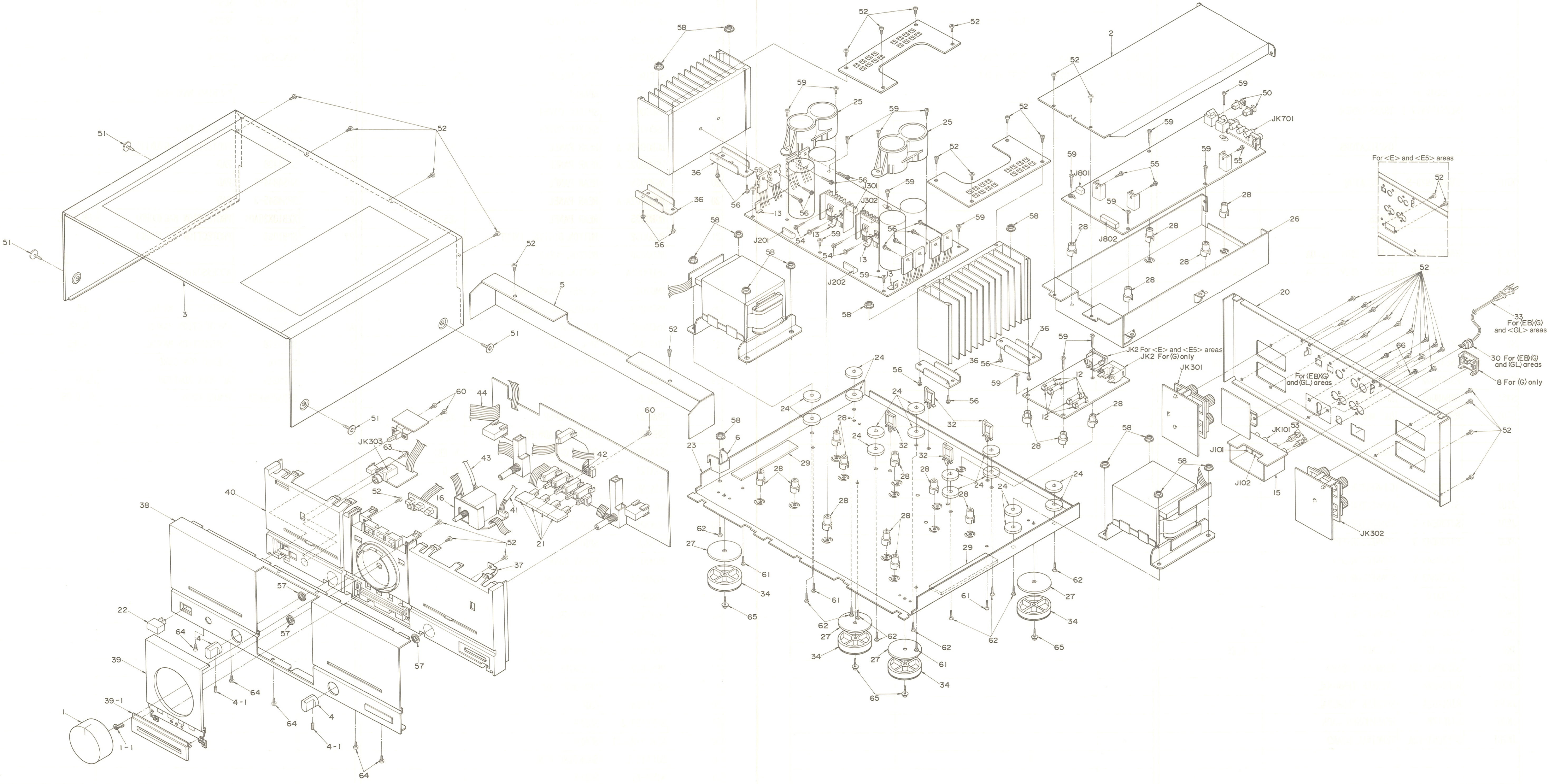
Ref. No.	Part No.	Part Name & Description	Remarks
L706	ELEPK4R7KA	COIL	
L707	ELEPK4R7KA	COIL	
L708	ELEPK470KA	COIL	
L709	ELEPK470KA	COIL	
L801	ELEV471KA	COIL	
L802	ELEV471KA	COIL	
L803	ELEPK4R7KA	COIL	
L901	ELEPK4R7KA	COIL	
		TRANSFORMERS	
T1, 2	RTP1N5B001	POWER TRANSFORMER	⚠<EB, G, GL>
T1, 2	RTP1N5G001	POWER TRANSFORMER	⚠<E, E5>
T701, 702	SLQB20G-1P	TRANSFORMER	
T703	SLZS10VN17-1	TRANSFORMER	
		OSCILLATORS	
X701	SVQAT1923-S	OSCILLATOR	
		FUSES	
F1, 2	XBA2C20TB0	FUSE 250V T2. 0A	⚠
F3, 4	XBA2C20TB0	FUSE 250V T2. 0A	⚠<EB, G, GL>
		SWITCHES	
S1	SSH1201	POWER	⚠
S2	ESE37263	VOLTAGE SELECTOR	⚠<EB, G, GL>
S101	RSR3F002	INPUT SELECTOR	
S451	RSR4B001	SPEAKER SELECTOR	
S701	RSP4001	DAT MONITOR	
		JACKS	
J101	SJT3321	CONNECTOR (3P)	
J102	SJT3417	CONNECTOR (4P)	
J201	SJT30543-V	CONNECTOR (5P)	
J202	SJT30643-V	CONNECTOR (6P)	
J301	SJT30543-V	CONNECTOR (5P)	
J302	SJT30843-V	CONNECTOR (8P)	
J801	SJT3319	CONNECTOR (3P)	
J802	SJT3011	CONNECTOR (11P)	
JK2	SJS9330B	AC OUTLET	⚠<G>
JK2	SJS9236	AC INLET	⚠<E, E5>
JK101	SJF3061-15A	TERMINAL BOARD	
JK301	RJH4402A	SPEAKER TERMINAL	
JK302	RJH4402A	SPEAKER TERMINAL	
JK303	SJJD17B	HEADPHONES JACK	
JK701	SJF3061-13A	TERMINAL BOARD	

Ref. No.	Part No.	Part Name & Description	Remarks
		RELAIES	
RLY401	SFDYG5A237P	RERAY	
RLY402	SSY126	RERAY	
RLY403	SSY126	RERAY	
RLY801	SFDYG5A237P	RERAY	⚠
RLY802	SFDYG5A237P	RERAY	⚠
RLY951	SFDYG5A237P	RERAY	⚠
		TEST POINTS	
TP251, 252	SJT3209	TEST POINT	
TP701, 801	SJT3209	TEST POINT	

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RGW0002-1K	KNOB, MAIN VOLUME	
1-1	SHR9451	SPACER	
2	RSC0006-1	DAC COVER	
3	RYK0054	CABINET	
4	RGW0003-1K	KNOB, SELECTOR	
4-1	XXE4D5FZS	SCREW	
5	RMV0003	FRONT COVER	
6	RMA0129	SCREW COVER	
8	SJS9330A	AC OUTLET COVER	<G>
12	SJT390	FUSE HOLDER	⚠
13	SUS227	BRAKET	
15	RSC0008	SHIELD COVER	
16	RSC0010	SHIELD COVER	
20	RGR0002B-A	REAR PANEL	<EB>
20	RGR0002C-A	REAR PANEL	<G>
20	RGR0036	REAR PANEL	<GL>
20	RGR0002A-A	REAR PANEL	<E>
20	RGR0035	REAR PANEL	<E5>
21	RGU0012	BUTTON, DIGITAL INPUT	
22	RGU0030	BUTTON, POWER	
23	RKU0001A	BOTTOM BOARD	
24	RMG0013	RUBBER, TRANSFORMER	
25	RMR0023	HOLDER, CAPACITORS	
26	RSC0007-1	DAC CASE	
27	SHG6405	SPACER, FOOT	
28	SHE187-1	SPACER, P. C. B	
29	SHG6404	RUBBER BOTTOM	
30	SHR129	CORD STOPER	<EB>
30	SHR127	CORD STOPER	<G. GL>
32	SHR9814	HOLDER, LEADWIRE	
33	SJA192	POWER CORD	⚠<EB>
33	SJA121	POWER CORD	⚠<G>
33	SJA190	POWER CORD	⚠<GL>
34	SKL306	FOOT	
36	SUW3099	BRARET	
37	SUS800	SPRING	
38	RYP0073	FRONT PANEL	
39	RYP0074	CENTER PANEL	
39-1	RGK0027	ORNAMENT	
40	RGK0127	FRONT GRILL	
41	REX0010	LEADWIRE ASS'Y	
42	REX0011	LEADWIRE ASS'Y	
43	REX0012	LEADWIRE ASS'Y	
44	REX0013	LEADWIRE ASS'Y	
50	VJA1034	CAP	
51	SNE2129-3	SCREW	
52	XTBS3+8JFZ1	SCREW	
53	SJPA11-1	SHORTING PIN	
54	XTW3+8T	SCREW	

Ref. No.	Part No.	Part Name & Description	Remarks
55	XYN3+F8	SCREW	
56	SNE2117-1	SCREW	
57	SNE4021	NUT	
58	SNE4065	NUT	
59	XTB3+20J	SCREW	
60	XTB3+8G	SCREW	
61	XTB4+10FFZ	SCREW	
62	XTB4+20FFZ	SCREW	
63	XTWS3+10Q	SCREW	
64	XTB3+10JFZ	SCREW	
65	XTW3+10T	SCREW	
66	XYN3+C6FZ	SCREW	<EB, G, GL>
		PACKING MATERIAL	
P1	RPG0114	PACKING CASE	
P2	SPH6438	PROTECTION BAG (UNIT)	
P3	SPS4488	PAD	
P4	SPS4844-3	PAD	
P5	SPS4845-3	PAD	
P6	XZB10X20A04	PROTECTION BAG (CORD)	<EB, G, GL>
P7	SPB1035	PROTECTION BAG (CORD)	
		ACCESSORIES	
A1	RQT0094B	INSTRUCTION MANUAL	<EB>
A1	RQT0094G	INSTRUCTION MANUAL	<G. GL>
A1	RQF0278	INSTRUCTION MANUAL	<E, E5>
A2	SJPD18	STEREO PIN CORD	
A3	SJP9215	AC PLUG ADAPTOR	⚠<G>
A4	SFDAC05E03	POWER CORD	⚠<E, E5>

■ EXPLODED VIEW (Parts list on page 44)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JK701
For <E> and <E5> areas
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J301
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J302
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33 For (EB)(G) and <GL> areas
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JK2 For <E> and <E5> areas
JK2 For (G) only
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30 For (EB)(G) and (GL) areas
8 For (G) only
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JK301
For (EB)(G) and (GL) areas
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Printed in Japan
F890408200TW/YY/TN

ORDER NO. AD8906208A3

Service Manual

Amplifier

Digital Power Amplifier

SE-M100

Color

(K) .... Black Type

Country Code	Area	Color
(GC)	Third Region	(K)

Please file and use this manual together with the service manual for Model No. SE-M100, Order No. AD8904083C8.

CHANGES

■ REPLACEMENT PARTS LIST

Notes: *Mentioned in this parts list are only those different from Model SE-M100(G), all other parts are the same as for SE-M100(G).

*Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

Ref. No.	Change of Part No.		Part Name & Description	Remarks
	SE-M100(G) ➡	**SE-M100(GC)**		
CABINET AND CHASSIS				
33	SJA121	**RJA0006**	POWER CORD ⚠	

Technics

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Printed in Japan
F890600900 TW/TN